



NOVEMBER 1959

*40<sup>th</sup> Anniversary Issue*

# **SAFETY NEWS**

A NATIONAL SAFETY COUNCIL PUBLICATION

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H537

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1

# National SAFETY NEWS

A NATIONAL SAFETY COUNCIL PUBLICATION

Vol. 80, No. 5

NOVEMBER 1959

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## NATIONAL SAFETY COUNCIL

Chartered by the Congress of the  
United States



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## THE COVER

Overseas construction projects present  
some strange contrasts, with modern mech-  
anized equipment operating in the midst of  
primitive manual methods. Accident pre-  
vention faces the handicaps of language  
barriers, stubborn adherence to traditional  
customs and a strong streak of fatalism.

40,000 copies of this issue were printed

National Safety News, November, 1959

# NOTHING SOFTER!



# NOTHING SAFER!

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## Another Industrial Revolution

A CENTURY and a half ago the world was entering a new era—one in which man was no longer dependent on his own muscles and domesticated animals. Power-driven machines would supply the energy for manufacturing and transportation.

Early in the 19th century the steam engine was at work. Then came electricity, discovery of petroleum deposits and methods of refining, and the internal combustion engine.

Civilization began to change from a rural to an urban pattern. Cities grew up around the new factories—with squalid, disease-ridden slums.

Public and industrial health measures were practically unknown. Cholera and typhoid were recurring plagues. Malaria and yellow fever delayed the development of many regions for nearly a century.

Factories were dirty, poorly lighted, and dangerous. They were expected to be that way and accidents were regarded as merely incidental to progress.

Early boilers blew up with distressing frequency, and boiler insurance with periodic inspection was one of the earliest attempts at industrial safety. Increased safety of personnel was largely a bonus which accompanied attempts to protect property. But inspectors and manufacturers of equipment had few standards to guide them.

Now we are entering another age—one that promises to make the scientific achievements of the past look like a toy chemistry set. Man is harnessing the power of the atom and casting his eyes toward outer space. The picture is full of disturbing but intriguing possibilities.

But the world of today is much better equipped to control hazards than the world of the past century. The 19th century industrial revolution gave little thought to the possible cost, in human life, of progress. Now, the potential hazards of new processes and materials are studied in advance and tried out under engineering and medical supervision.

There are organizations—local and national, private and governmental—which study these developments and circulate information for the protection of workers and the public. On a world-wide scale the International Labour Office is bringing together men of all nations to further these humane enterprises.

Without standards, safety would be severely handicapped. The American Standards Association and similar organizations in other countries have provided tools for better and safer operations, as well as better living for millions. And there are testing laboratories whose labels assure the public that the product can be used with confidence.

Research has become an essential part of modern life—not the isolated labors of men like Priestley and Davey but scientific teams with equipment and financial backing whose discoveries will be put to work promptly.

But perhaps the greatest advancement of the past century has been the development of a public conscience—one which exerts an immense influence for the conservation of life and health.

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to improve productive  
efficiency, and safety  
in huge Detroit tractor  
assembly plant

**A**nother leading example of the way Pittsburgh COLOR DYNAMICS improves productivity and welfare of workers is the enlarged Detroit plant of Massey-Ferguson, Inc., world-famous builder of tractors and combines.

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operations for North America are now concentrated here.

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● Massey-Ferguson's satisfaction with the results of COLOR DYNAMICS is expressed by J. L. Gilliam, General Factory Manager of the Detroit assembly plant. "Our experience," he states, "convinces us there are dollars-and-cents advantages in this purposeful use of color. It has materially improved the productive efficiency and safety of our workers.



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● Send for our comprehensive fully illustrated book which explains simply and clearly the principles of COLOR DYNAMICS and how to use them effectively. It's FREE. Better still, we'll prepare a detailed color program for

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Money for strength to keep the peace. Money for science and education to help make peace lasting. And money saved by individuals to help keep our economy strong.

Your Savings Bonds, as a direct investment in your country, make you a Partner in strengthening America's Peace Power.

The Bonds you buy will earn good interest for you. But the most important thing they earn is peace. They help us keep the things worth keeping.

Think it over. Are you buying as many as you *might*?



HELP  
STRENGTHEN  
AMERICA'S  
PEACE POWER



## BUY U. S. SAVINGS BONDS

*The U.S. Government does not pay for this advertising. The Treasury Department thanks The Advertising Council and this magazine for their patriotic donation.*



# Q

WHAT SPECIAL  
SKIN CLEANSER  
DO YOU  
NEED?...



## PAX WATERLESS SKIN CLEANER

PHARMACEUTICAL GRADE

A CREAM

**REMARKABLY DIFFERENT  
REMARKABLY SUPERIOR**

### Features:

- The pH closely matches that of the skin.
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- Use it on the face before shaving with an electric razor and you get a marvelously close shave and no razor burn.
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# A

ASK ...



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259 J

# THE SAFETY VALVE



Nothing human is alien to me

—TERENCE

*With this issue, NSNEWS celebrates its 40th anniversary. During the last 17 years many readers have looked to this page for the editor's personal comment on matters serious and trivial. This month, as a sort of birthday present, his colleagues have written this page for him.*



A few gray hairs and many deadlines back the perpetrator of this page looked something like this. He can't remember when this one was taken but the vest and watch chain suggest the late 20's or early 30's. For a more recent facsimile, see page 10.

ON MONDAY morning, January 29, 1923, a black-haired young man walked into the offices of the National Safety Council in Chicago, hung up his hat and went to work on the March issue of the NATIONAL SAFETY NEWS.

Someone with a sharp ear for speech inflections would have guessed that the new associate editor was a Canadian. Some of the anecdotes he told would have revealed a background as a mule skinner with the Royal Canadian Field Artillery in World War I.

After the Armistice and occupation duty along the

Rhine, he had returned to his father's printing shop in Otterville, Ont., but soon decided to try his luck in the States. He arrived in the Midwest in 1919, tarried a while at the University of Chicago, and served as associate editor of the *Inland Printer* until 1923.

Little did Carman Fish realize that he would still be with the National Safety Council in 1959. But today, several grey hairs and 441 issues later, he can look back on an association with the NATIONAL SAFETY NEWS for 37 of its 40 years—most of the time as editor. That makes Carman (named not in admiration of Bizet, but for a Canadian Methodist bishop well known to an earlier generation) dean of industrial safety editors, and probably the veteran trade magazine editor in the nation.

An editor is usually an incorporated entity—a meaningless name on a masthead. Only rarely does an editor have that blend of talent, taste, and trenchancy that makes him welcome without invitation into the minds and lives of his readers.

Many safety men have found this happy affinity with a magazine that has blood warmth through the personal journalism of Carman Fish. The "Safety Valve" column in the NEWS and the *Employee Publication Newsletter* which he writes have brought to life an editor, and brought much that is good in life to his readers. They have come to know his family; the junk in the attic of his home, "Crestfallen Manor"; his interest in the Civil War.

What they don't know, but what you can learn from his "fellow working stiff's" (as he calls his colleagues), is his dedication to the NATIONAL SAFETY NEWS. In 37 years, come flu or high water, he has always been on tap at deadline time. No mistress is more demanding, no child more capricious than a magazine, and his patience and devotion have been unflinching.

His careful retooling of manuscripts has lifted many a mediocre paper into the class that brings demand for reprints. Ever in search of a fresh way of saying the eternal truths of safety, he considers the banal and trite the deadly sins of journalism, and language a jewel to be cut and polished with care.

His interest in all things from baseball to roses, from hard hats to Lee's lieutenants, shows that the quotation from Terence at the top of the "Safety Valve" page is a most fitting description of its author—"Nothing human is alien to me."

*The Working Stiffs*



A bright new star  
on the safety shoe horizon



the **Iron Age**

# Satellite

**STEEL TOE SAFETY SHOE**

**No. 672**

Sizes B 7-13  
C 6-13  
D 6-13  
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EEE 6-13

*An "out-of-this-world" value*

In this Chukka styled steel toe safety shoe, Iron Age designers have captured all the classic features of the original from India. Fashion-toned in plump, supple Sierra golden brown *Quilon*® leather, the Iron Age "Satellite" feels as good on the foot as it looks. In fact, it has all the comfort of a dress oxford plus the added protection of a high shoe.

For safety against slipping, there's a Bearfoot Air Cushion Neoprene Grit Sole—comfortable under

foot, longer wearing, too.

When you stock and show the "Satellite" you are trading on the modern trend towards casual living. Remember, safety knows no season. There's year 'round appeal in this better Iron Age value to help you build your coverage. Ask your Iron Age representative to show you the "Satellite"—or write us and he will see you. Iron Age Division, H. Childs & Co., Inc., Pittsburgh 12, Pa.

**Iron Age SAFETY SHOES**



# Our First 40 Years Were the Hardest?



In celebration of the 40th anniversary of the News, the editorial staff cut a birthday cake. Left to right: Roy Benson, technical director; Jim Saul, associate editor; Carman Fish, editor; Bob Dorsett, associate editor, and Bob Meyer, editorial director.

NOVEMBER 24, 1919, was much like any other day at National Safety Council headquarters, but it was marked by one incident. A messenger from the printer brought a small package.

It was eagerly opened by Louis Resnick, publicity director for the Council. Looking on with interest were C. W. Price, general manager, and Sidney J. Williams, chief engineer and secretary.

The package contained a few copies of Vol. 1, No. 1 of NATIONAL SAFETY NEWS—just off the press. By today's standards, the infant was rather puny—four 8½ by 11-in. pages with two halftone illustrations. But the foreman of the composing room at the print shop always remembered its birth. Several years later he remarked that no subsequent issue had given them so much trouble. Copy was set and reset, and pages made and remade until Editor Resnick was satisfied.

The News was the outgrowth of the weekly *Newsletter*, through which the Council kept in touch with members and spread information made available through member cooperation. For more than a year Resnick had been ambitious to

develop the *Newsletter* into a real magazine, and during the months following World War I conditions seemed favorable for the project.

The Council was growing steadily in membership and influence. Early in 1919 it had moved from its first home at 208 South LaSalle St., Chicago, to larger quarters at 168 N. Michigan Ave. in the same city to accommodate expanding services and an increased staff. Approval of the new magazine was voted by the Executive Committee.

There were a few dissenting voices, however. The Council had been organized as a voluntary cooperative association, and some members felt the friendly, folksy tone of the *Newsletter* would be lost in a more formal magazine. So, rather timidly, the first few issues of the News carried the subtitle, "The Weekly Newsletter of the National Safety Council."

Issue No. 1 contained these headings: "Interest in Public Safety Becoming Widespread," "Wartime Iron and Steel Accidents Less Than Pre-War," "Want to Stir Up a Departmental Competition?," "Canadian Industrial Conference Favors Joint Councils."

In the editorial column was a message from the Council's newly-elected president, Ralph C. Richards, chairman of the central safety committee of the Chicago & North Western Railway and widely known as the father of organized safety work on American railroads.

There was a paper shortage in 1919, and members were warned to get their orders in for the 1920 Safety Calendar.

Vice-presidents of the Council, when the News made its appearance, were F. P. Sinn, William H. Cameron, Arthur H. Young, Lewis A. DeBlois and William E. Worth.

Mr. Cameron, the Council's first managing director, had resigned to become manager of industrial relations for Eastman Kodak Company. He returned to the Council late in 1921. Sidney J. Williams, who came to the Council staff in 1918 from the Wisconsin Industrial Commission, served the Council in many capacities until his death in 1956. Although his background was industrial, he became best known through his activities in the public safety field. Throughout his years with the Council he was a valued friend and counselor of the editors.

Two members of the 1919 staff are still in service: Herbert H. Greenwald, director of the accounting division, and George O. Lindquist, supervisor of purchasing.

Volume 2, beginning with the issue of July 5, 1920, jumped from 4 to 20 pages and carried advertising for the first time. Again there were misgivings by some members of the Executive Committee who feared that accepting advertising would commercialize the safety movement. The innovation, however, met with general approval among readers.

Advertisers in this first issue were:

Foamite Firefoam Company  
Safety First Shoe Company  
Parkway Shoe Company  
The Prudential Insurance Company  
Strauss & Buegeleisen (eye protection)  
Merry Optical Company  
Utility Garment Company  
De Waters Safety Latch Company  
Safety First Supply Company  
Geuder, Paeschke & Frey Company (machine guards)  
Cleveland Breathing Machine Company

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*Seen and Heard at the  
National Safety Congress*

# PROTECTOSEAL EXHIBIT

The attention of both Safety and Production Men was focused on the idea of economy with safety, i. e. using Protectoseal equipment to effect cost savings on production processes, as well as providing protection against the hazards of fire and explosions. Overheard, were the following ideas relating to:

## SCREW MACHINE DEPARTMENTS

Automated parts cleaning to free the machinist from non-productive time . . . cleaning precision machined parts at the work station to permit accurate "miking" for quality control . . . rejects reduced.

## ASSEMBLY DEPARTMENTS

Adhesive measured accurately with one stroke, allows lamination to proceed quickly and evenly. No idle time when supplies run out . . . application container refilled with turn of valve . . . no lost time . . . no trips to supply station.

## FINISHING DEPARTMENTS

Spray guns and masks always available and ready for use . . . no wasteful cleaning time to interrupt work flow. Wiping cloths are handy when needed . . . disposed of safely when soiled.

## MAINTENANCE WORK

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## Seen at the Exhibit

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Requires minimum storage space . . . natural, close to body carrying . . . easy dispensing.

### END-BUNG VENT



For horizontal drum storage . . . stops leaks . . . provides pressure and vacuum relief.

### VISCOUS LIQUID STORAGE- DISPENSING CAN



Instant, clean cut-off . . . no back flow to dry or freeze opening.

### BENCH PARTS WASHER



With portable parts basket . . . speeds cleaning . . . keeps hands out of solvent.

### TIPTYPE SAFETY CANS



Space-saving wall-mounted bracket . . . cans tilt easily for dispensing . . . swing back to upright position.

### SAFETY DRUM PUMP



Equally efficient for flammable liquids and light oils . . . eliminates a common safety supervision problem.



(Fiction)

## THE DIARY OF A SAFETY ENGINEER

By BILL ANDREWS

*Our Safety Engineer needs another assistant. Shall he give the job to a safety-minded young foreman with plenty of common sense, shop know-how, capacity to learn, and ability to handle men? Or will his lack of technical training be a handicap in a radioactive world?*

# What About Bert?

November 2, 1959

I'VE KNOWN Bert Harding for two years. He was a new employee at Lenners Pump Shop when we first met, and I caught him smoking near a stack of combustible packing materials by the loading dock.

He was about 25 then, just out of the service, and his manner was cocky. But he was also a little scared, and I decided to lecture him rather than report him to his foreman. He didn't thank me, either for the lecture or the cover-up.

A couple of months later, he came into the first-aid room with a laceration of his forearm. It needed four stitches, but he was back on the job next day. The report filled out on his case on the basis of his story said he cut himself on a projecting piece of metal strapping on a wooden case near his machine.

I didn't pay any attention to the report, except to have one of my assistants check the Lenners shop for any similar conditions. He didn't find any, but he did see some evidence of widespread horseplay among the young employees who formed the majority of Lenners' work force.

Before I got around to doing anything about the horseplay, there was a disabling injury at Lenners as a direct result of horseplay. An older worker, a set-up man, had been teased repeatedly by some of the youngsters, and he was a nervous guy anyway.

Some scatter-brained kid waited till this man was in the midst of a complicated job on a big power

press. Then the kid deliberately yelled "Look out, Joe!" and smashed a Coke bottle on the concrete floor behind him. Joe dropped his wrench, reared back and cracked his head on the machine. He had a moderately serious concussion.

There was really nothing to investigate. The foreman saw the incident, and the youth who smashed the Coke bottle was fired on the spot. However, it meant a follow-up job for the safety department.

The foreman, a steady Swede named Carlson, confessed to me he didn't know how to stop the horseplay. "These kids don't give a damn for nothing or nobody," he said. "They don't care if they work. They don't care if they get fired. I gotta have men on the machines, but these kids, they're driving me crazy."

I considered having a shop meeting and delivering a straight-forward speech about the dangers of horseplay. But I decided that such an approach would only give some of the kids a chance to show off by heckling me.

While I was still considering strategy, Bert Harding came into my office just after Lenners shut down for the day. I was alone in the office, and Bert seemed uneasy. I asked him to sit down and tell me what was on his mind.

It took him a while, for he was still unsure of what he ought to do. In summary, the story as it finally came out was this:

Bert was no squealer, and he could take care of himself, he as-

sured me. As long as it was just him being bothered, he wouldn't go running to the front office. Like the time he was hurt. He'd lied to the nurse and the safety man who interviewed him.

A fellow worker had been teasing him repeatedly, and just before the accident this fellow had come up behind Bert with an air hose and let a blast of air go at the back of his neck. Bert had jumped three feet, spun around, and taken a swing at his tormentor.

It was a swing that grazed a packing case with a projecting metal strap. He waited till his arm healed, and then he caught the other worker off the job and knocked him down. After that, nobody bothered Bert with practical jokes.

"I didn't think any more about it until the old man got his skull cracked in just the same kind of damn-fool stuff. I told my girl about it (we're getting married in two weeks), and she said I ought to do something more than beat up guys who did me dirt. She talked a lot of guff about being a good citizen and using my influence. She thought I ought to go to the foreman.

"I told her what I told you. I ain't no squealer. Then she says there must be somebody I can talk to who carries some weight around the plant but would level with the guys. I remembered about that time you caught me smoking and didn't turn me in. Sally says, right off, that you sound like the right guy to go to. So here I am."

—To page 58



# The Count Down

has already started on the

## NEXT SERIOUS EYE ACCIDENT

It is estimated that 27% of industry accidents are eye accidents. 3% are injuries to eyes, but an additional 24% are caused by poor vision due to faulty eye protection. Official government estimates show these eye-accidents cost industry millions of dollars each year. Further, poor sight holds back production anywhere from 25% to 40%. No wonder foul sight is one of your largest safety-efficiency problems.

Both types of MAGIC Cleaning Stations are Science's answer to foul sight. For goggles and glasses stay dirty and dangerous unless you make it as easy as possible to clean them. Choose the type station to fit your conditions:

About the MAGIC Lens Tissue that polishes and protects lens as it cleans: Unmatched in quality, it far exceeds scientific specifications. Each sheet is BIG. It's 50% larger than usual and has twice the tearing strength. One sheet is big enough to clean the largest safety goggles. Every square inch is packed with Silicone's Sparkle Power — on both sides of the sheet. It is interfolded, serving only one sheet at a time — not in bunches. And that's an exclusive feature with MAGIC. Yet it costs less. The compact dispenser is self-mounting; no screws, no drilling. Just stick it to the wall. No maintenance.

No adjustments. No wear. No moving parts. Absolutely indestructible.

About the MAGIC Heavy-Duty Lens Cleaning Station: It's for dirty, oily areas or where Anti-Fog protection is needed — on plastics or any eyewear. MAGIC combined Cleaning & Anti-Fog Fluid combines all needed ingredients. And it's pressure-packed. Just touch the can and — *PRESTO* — the can does the rest. 1,400 applications per can. One can equals 4 old-fashioned bottles. No pump. No bottles to refill. Indestructible dispenser — with no moving parts — releases sheets 1-by-1, not in bunches, greatly reducing waste. Or, to use your home-made fluid, we can supply our Adapter (\$2.70) with a giant 16-oz. bottle and plunger complete. MAGIC Heavy-Duty Paper, not silicone-treated, is superb, strong, wet-strength paper. Like its sister-product, the world's finest quality. No scratching on plastic, and no lint.

Buy the leader and save money. Buy MAGIC. Exchange all your other stations for MAGIC FREE.

Magic Silicone Lens Tissue (6 refills (800) sheets ea.)	Ctn. \$ 8.40
Magic Lens Tissue Dispenser FREE WHEN EXCHANGED	ea. 2.50
Magic Heavy Duty Dispenser FREE WHEN EXCHANGED	ea. 5.95
Magic Cleaning & Anti-Fog Fluid (Twelve 12-oz. cans)	Ctn. 12.50
Magic Heavy Duty Paper (18 giant refills (760) sheets ea.)	Ctn. 11.60
All prices F.O.B. Shipping point	

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Lens Tissue

MAGIC Pop-up pack in self-dispensing box for your desk or any place in the office, plant or laboratory, \$11.95 per carton of twelve boxes.



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UNLESS the cause of safety is advanced substantially in the next ten years, America is going to pay a ghastly price for behavior that is unpardonable in a free and supposedly responsible society, President Howard Pyle told the Annual Council Meeting which opened the 47th National Safety Congress and Exposition in the Grand Ballroom of the Conrad Hilton Hotel, Monday morning, October 19.

"Organized safety, as such, has never been as strong as it is today," said Mr. Pyle. "But it's not enough for the experts to know what it takes to prevent accidents—either on or off the job."

Mr. Pyle called attention to the increasing ratio of off-the-job to occupational injuries due to the lack of an "organized attitude" toward home and traffic accidents comparable to that which prevails in industry. Inspiration at the local level is needed to apply the knowledge gained through 46 years of safety effort.

#### THE CONGRESS STORY

Because of an inflexible press date, this installment of the story of the 47th National Safety Congress had to end with the Annual Meeting. A list of officers will be found on page 23 and excerpts from Congress talks on page 22. More next month.

Accomplishments of the past year, described in detail in the booklet, *Report to the Nation*, were summarized briefly by the executive vice-president, Gen. George C. Stewart. Important developments during the year included the organization of two new departments: the Public Safety Department, covering all phases of public safety other than traffic, and the other dealing with youth activities.

**The financial picture.** William H. Lowe, vice-president for finance, stated that prospects for balancing the Council's income and outgo for the year were excellent. He called attention, however, to the Council's "recurring dilemma"—the curtailment of important activities because of limited income.

**Election.** The report of the nominating committee, presented by Walter A. Stewart, chairman, was unanimously accepted. A list of the elected officers, trustees, and directors will be found on page 23.

It was a busy week end for those concerned with the management of the Congress and the planning of programs. Friday, Saturday, and Sunday were filled with meetings of committees and the Council's various conferences. On three floors of the Conrad Hilton exhibitors were busy setting up their exhibits to be ready for the official opening Monday morning.

The Industrial Conference, the policy-making body guiding the

Council's sectional committees and its Industrial Department, met Sunday afternoon to report on the progress of its many activities for safety on and off the job.

Conspicuous among the year's accomplishments was the completion of a new and enlarged edition of the Council's *Accident Prevention Manual*, which will be available to members during November. Many other books and booklets on specific subjects were produced during the year.

Ten Safety Training Institute Courses were conducted at NSC headquarters with an enrollment of 236 trainees. The training program included five courses in fundamentals, two in safety management techniques, one in public utility safety, one in radiation safety, and one in industrial hygiene.

#### LOOKING AHEAD

The 48th National Safety Congress and Exposition will be held October 17 to 21, 1960. Headquarters will be in the Conrad Hilton Hotel, Chicago, with meetings in other hotels.

The following additional dates have been reserved for future Congresses:

1961 . . . October 16-20  
1962 . . . October 22-26  
1963 . . . October 21-25  
1964 . . . October 19-23



# "BUT I AM WEARING SAFETY GLASSES!"

Wide Choice of Attractive  
Plastic Frame Streetwear-  
Style Safety Glasses



Choice of all flesh, bronze or demi-amber models, or two-tone models with ebony or demi-amber overlay on crystal. Sideshields and rocker nose pads optional.

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New Style AF has nickel-silver frame, extra-strong, four-point contact bridge, and snug rocker nose pads . . . plus wide modern F7 lenses. Style AFS equipped with sideshields of clear perforated plastic.

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Now available at slight additional cost. Acme masks offer the greatest all-around vision of any industrial mask.



## Globe $\frac{M}{M}$ Mouth-To-Mask Resuscitator

**Mouth-to-Mouth resuscitation without the objection of intimate contact.**

When an asphyxial emergency strikes, **YOU MUST BE READY.** Seconds count, if resuscitation is to be successful. With the  $\frac{M}{M}$  Mouth-to-Mask Resuscitator, life-saving resuscitation can be started immediately by anyone at the scene. **BE READY . . .** with low cost  $\frac{M}{M}$  Mouth-to-Mask Resuscitators strategically located throughout your plant. Anyone, in seconds, can be taught to operate this new resuscitator.

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A few choice territories still available for qualified industrial safety specialists.







# WIRE FROM WASHINGTON

By **HARRY N. ROSENFELD**, Washington Counsel, National Safety Council

This report is an information service. Publication does not imply National Safety Council approval of or opposition to any legislation mentioned

CONGRESS having adjourned and the President having completed action on all bills enacted, Washington's safety focus shifted to the various executive agencies and departments.

**Industrial Safety.** The Atomic Energy Commission established a new Office of Health and Safety, with responsibility for developing and recommending health standards for the protection of workers and the public from atomic-energy-induced radiation.

It also will develop and recommend standards for the protection of personnel in AEC operations from non-nuclear as well as radiation accidents, and will serve as the liaison with state officials dealing with radiation protection. The AEC warned that inspection and enforcement "will be a major task" in dealing with radiation hazards in uranium mines.

The United States delegate to the Third General Conference of the International Atomic Energy Agency urged that agency to undertake two major safety programs: responsibility in the field of reactor hazards evaluations, a goal toward which the agency is already building a staff of experts in reactor safety; and the problem of disposal of radioactive wastes.

The United States Government recommended that this international agency move into the area of coordination with other international organizations and national governments "in the adoption of standards for maximum permissible radi-

ation exposure resulting from the peaceful uses of atomic energy." Such findings can be related to "minimal worker and environmental exposure."

The Joint [Congressional] Committee on Atomic Energy released a summary-analysis of earlier hearings on employee radiation hazards and workmen's compensation.

The analysis notes general agreement on the need for: coordinated guidance on standards for exposure to radiation and adequate enforcement of standards; more research on the effects of ionizing radiation on man and greater public knowledge; more persons trained in radiation control; and assistance to

communities in planning for radiation accidents.

Substantial disagreements were noted on how such needs and objectives should be met, some witnesses urging uniform federal legislation and control, other witnesses insisting on the superiority of state regulation.

The Bureau of Mines issued proposed regulations to govern the testing and approval of hydraulic fluids for fire-resistant qualities and concentrates for the production of such fluids. The bureau also released data on the injury-frequency rate in coal mines for the half-year ending June 30, 1959. The record was 5 per cent lower than in the same period of the preceding year.

The Bureau of Labor Statistics of the United States Department of

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## THE MONTH IN WASHINGTON

- AEC establishes Office of Health and Safety to develop health standards for protection of workers and public from atomic-energy-induced radiation and non-nuclear accidents, and to serve as liaison with state officials on these problems.
- Through AFL-CIO Standing Committee on Safety and Occupational Health, the AFL-CIO Annual Convention approves establishment of trade union safety movement. Labor-management cooperation on safety sought. Unions urged to obtain safety-health clauses in contracts.
- FAA to set up nine centers for en route-air traffic control to assure safety for high-altitude civilian and military jet planes. Via unified system, FAA proposes to take over most air traffic control and navigation functions performed by military services.
- Recommendations on marine construction, lifesaving, radio, navigation safety, and nuclear power circulated among 50 nations to participate in 1960 London conference reviewing 1948 Convention for Safety of Life at Sea.



The author (right) discusses plans for an overseas construction job.

# Global Construction Safety

How a contractor with world-wide operations faces the problems and pitfalls of overseas operations

Roads are replacing trails in many countries. Here an American crew is driving piles for a Thailand highway.

**OVERSEAS WORK** is vast, complicated, risky. But with all its problems and pitfalls, it's a fascinating business.

The overseas contractor is not just a contractor working abroad. He's much more. For he is often called on to play the role of diplomat, economist, politician, educator, and pioneer in safety procedures.

This is no fictional image. This is the contractor who is overseas for the long pull, who has committed himself to worldwide service and does his best to integrate his organization into the social and economic frameworks of overseas countries. He makes the world his business, and strives to know all he can about it.

Today, overseas construction is almost totally different from what it was 15 years ago. It's a special art that must be divorced as much as possible from a firm's domestic



operations. Besides multiplying all the usual perils of domestic construction, overseas work adds major problems of supply, transportation, currency convertibility, finance, personnel relations, training, climate, manners and morals, protocol, equipment maintenance, and even occasional revolutions.

A record of successful construction management in this country is no assurance of a rosy future over-

seas. The Ace Construction Company may be able to pour concrete faster and cheaper than everybody else in Milwaukee, but that doesn't make it ready to tackle the vast complexities of overseas work.

Most of today's large and successful overseas contractors moved abroad cautiously some years ago, generally carried some specialty with them, gradually developed the overseas know-how and organiza-

**By GEORGE F. FERRIS**

President, Raymond International Inc. An address before the Construction Section, 47th National Safety Congress, October 19, 1959.

tion to operate successfully. Too many contractors have been lured abroad by promises of the "fast buck," and have failed because of inexperience and lack of proper concept of the field.

As the overseas organization develops, it should use fewer and fewer Americans. Handling U.S. personnel abroad is not only difficult but expensive. Besides their higher wages, which often cause jealousies, Americans demand special housing, recreational facilities, schools, medical care, sanitation, food, and occasional trips home. Americans are needed at the start of a project to train local labor, but as soon as possible, they should be withdrawn.

Currency inflation and convertibility in foreign countries, of course, add still another problem, because American services now cost these people several times what they did only a few years ago.

Financial instability of many countries forces the contractor to remain as flexible as possible. He may be in the middle of a project, and if government financial position deteriorates, the success of the project can be jeopardized. The moral, of course, is: Don't overextend yourself. Work with the client's money. You cannot be too prudent on surrounding yourself with safeguards to insure payment anticipated by the contract.

Estimating overseas construction costs has thrown more than one American contractor. It bears little resemblance to proven domestic methods. The inexperienced contractor will sometimes try to figure a local unit cost simply by applying a factor to the accepted unit cost he works with in this country. This factor is extremely difficult to determine, even for the experienced contractor, and it varies sharply around the world.

Years ago I remember being puzzled by some of the apparently backward methods of local contractors. It took some time to convince me that in some areas battalions of workers carting concrete in gasoline cans will place concrete more

cheaply than our mechanical marvels.

Local workers, generally, can be trained easily to operate specific pieces of equipment, but it's important for maximum efficiency to keep them on the same type of rig throughout much of the world. Local workers rarely become the jack-of-all-trades type of construction man common in this country.

But on a repetitive-type operation, he learns fast and becomes highly skilled.

We also find that you cannot change the manner in which local people have accustomed themselves to working. We have our way of doing things—they have theirs—and usually we work out some kind of compromise. Sometimes we don't.

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Material-handling equipment in the jungle. Elephants have proved useful in clearing away brush for roads in Thailand.



Construction workers go to sea. This multiple-well oil-drilling platform was built in the Gulf of Paria, Trinidad.



# Operation Deep Freeze

## Setting up and maintaining a base at the South Pole poses some unusual hazards for U. S. Navy personnel

IN JANUARY, 1912, after months of struggle through frigid wastes, the English explorer, Capt. Robert Scott, and four companions reached the South Pole.

As Scott paused to plant the Union Jack in the middle of that deserted continent, he little dreamed that it would be almost half a century before another human would set foot on the bottom of the world.

Nor, in his wild flights of fancy, would he have guessed that the next polar party would come in force to set up a permanent settlement at the South Pole.

But today more than a score of Americans are living in comparative comfort at the very spot where Scott chewed his hardtack and pemican. These men are part of a force of nearly 200 scientists and U. S. Navy personnel stationed at four United States scientific bases in Antarctica through the 1959 winter as part of Operation Deep Freeze IV.

Operation Deep Freeze was launched in 1955 at the direction of

President Eisenhower to prepare the way for and give support to the U. S. Antarctic program of the International Geophysical Year. Following the geophysical year, the operation, under the direction of the National Science Foundation, has been continued in the interest of securing additional scientific information. In 1960 Deep Freeze will turn its research emphasis to geology, map-making and Antarctic biology.

Deep Freeze '60 will involve eight ships, 36 airplanes, and about 3,000 men. This task force began pushing off from U. S. ports toward the end of August to arrive for the summer season in the Antarctic which runs from October through March. At that time a reduced complement will settle in for the winter.

As might be expected, an expedition as ambitious as Deep Freeze is faced with many unusual hazards—and safety organization plays a key role in the success of the undertaking.

Safety figures into Deep Freeze long before men and supplies reach

Antarctica. In fact, it begins months—and even years—earlier at American embarkation ports.

Preparing for the first and subsequent expeditions has been a challenge to Navy safety men. The problems encountered were many, involving loading and unloading of ships, training operators for mechanized snow equipment, housing facilities, explosives, clothing, fuel, supplies and the special equipment needed for extreme cold.

Early in the planning, operator testing programs were set up on special mechanized equipment needed in the frigid, snow-covered land. Particularly needed was training in the safe operation of Army "Weasels," vehicles stored since World War II.

An outdoor testing area was laid out and a testing program devised similar to standard Navy testing of motor vehicle operators, but with particular emphasis on Weasel idiosyncrasies such as its very sensitive clutch. The Weasels were to be used to haul trains of sleds loaded with supplies.

For passenger transportation, special "Sno-Cat" vehicles were purchased and equipped with extra wide tracks for treading gently on deep snow. Tractors were also equipped with special wide tracks,



and a high-visibility orange paint was used on all vehicles to make them stand out in the snow.

Motor vehicle testing procedure was similar to standard tests given operators of 10-ton trucks. Flags and stanchions were used, and special diagrams were painted on paved testing areas to accommodate unusual types of equipment.

Since oil-burning stoves were to be used for heating huts and other similar buildings, 25 automatic alarm systems for the detection of carbon monoxide fumes were secured. To assure effective operation of the devices in extremely cold weather, an electric heating system was installed in each detector.

Explosimeters were also purchased, and operating and maintenance instructions given. It was important to have adequate spare parts, as resupply is strictly limited in Antarctica.

For foot protection, footwear was purchased guaranteed to keep feet warm at -20 F.

The most dangerous task encountered was the handling of explosives. Since Deep Freeze I (1955-56), more than 200,000 lbs. of explosives have been handled each year. Due to the large amount of dynamite and caps received and stored, radio silence had to be observed at times. On several occasions when ship loading was in progress, thunderstorms interrupted loading operations.

A wide variety of explosives was handled, including dynamite, demolition kits, caps, Nitramon, Nitramex and Jato bottles. It seemed that enough explosives were loaded to blow up every ice crevasse at the South Pole.

Of course, the hazards of the Antarctic region were very different from those encountered during loading at American ports. From the start it was felt that the greatest hazards at the bottom of the earth would be aircraft failure, trail pitfalls and exposure. How great a toll did these hazards actually take?

**Aircraft failure**—Flyers forced down in a wasteland of snow face problems of survival far different from those who ditch planes in Kansas wheat fields. To keep me-

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NAVY electronics technicians work on crevasse detectors at sub-zero temperatures. Detectors play key role in safe movement over snow.



CREWMEN use special covering to heat Skymaster engine. Rigid maintenance keeps aircraft accidents to minimum in spite of flight hazards.



FUEL moves supplies and keeps men and equipment warm. Here parka-garbed Navy men join hose connection in gasoline line from ship to base.



# CONGRESS QUOTES

**From sessions of the 47th National Safety Congress**

## Shifting Hazards

In the future, the man who takes care of machines may face even greater hazards than the machine operator.

He will be faced by such things as X rays, radiant energy, super-sonics, and the hazard of making close adjustments to a machine that's operating.

So, the man we may have to take special care of may not be the machine operator but the man who takes care of the machine.—*John A. Dickinson, Chief, Code and Specifications Section, National Bureau of Standards, U. S. Department of Labor.*

## A ConveyORIZED Age

Considerable expansion in the use of conveyor equipment, and more extensive use of conveyors in public places are ahead.

An increasing minimum wage will force industry to move employees from nonproductive assignments (material handling is one) to productive jobs.

There will be considerable expansion in the use of current conveyor equipment and conveyor techniques in many new plants and warehouses. There will be greater exposure of the public to conveyors, which means the accident potential will rise.—*Walter B. Pipp, Rapids Standard Co. (Material Handling)*

## Bitter Reality

It makes little difference to the families hit by fatalities and serious injuries that a safety award has been received by the plant. An injury is a bitter reality to the disabled man and his family.

Safety is a never-ending job. As

long as there is a single injury to one of our employees, we cannot be satisfied.—*Emmet K. Olson, Jr., Director of Safety, Kennecott Copper Co. (Mining)*

## Electricity vs. Falls

Far more electricians are hurt in falls from ladders than from electric shock. Many injuries that occur are not directly connected with the obvious hazards of maintenance employees' jobs.

From experience and instruction, the men seem aware of the dangers of their particular work. Apparently they relax during the preparatory and cleanup phases.—*Richard T. Wise, Manager, Maintenance Service, B. F. Goodrich Footwear and Flooring Co. (Rubber)*

## Too Much "Do-It-Yourself"

Do "do-it-yourselfers" really save money on home repair projects? Or do they pay in ruined health and painful injuries for the privilege of working till nightfall? These are questions which concern industrial safety men.

Home is the most dangerous place we frequent during our normal 24-hour day. It needn't be this way. We must control the do-it-yourself urge; confine it to those chores we are able and experienced in performing. Men have caught up with women; now our work is never done. Learn to relax and enjoy your home. Make it a haven from danger.—*John M. McAlpine, Supervisor of Safety and Plant Protection, Celanese Corp. of America. (Textile)*

## Safety-Minded Pioneers

The fearless pioneer was one of the most safety-minded individuals

of all time. Neither Davy Crockett nor Daniel Boone ever went into the wilderness without intensive preparation. Every hazard was weighed and plans made to minimize each risk. Their rule was preparedness.

Compare this with the off-the-job safety attitude of today. The only real safety progress is in industry. On other fronts safety is near collapse.—*Thomas D. Beven, President, Elgin, Joliet & Eastern Railway. (Railroad)*

## Watch Those Feet

During an 11-week period in 1958 a series of accidents occurred, involving slips and falls and dropping objects on feet. Wage losses totaled more than \$6,000, not counting production losses and fringe benefits. Total cost of the injuries: close to \$16,000.

A concerted effort to get employees to wear slip-resistant, toe-protecting shoes resulted in this 11-week showing in 1959: Wages lost, \$2,224; total loss, \$3,000.—*Gordon D. Albers, Safety Director, George A. Hormel & Co. (Meat Packing, Tanning and Leather Products)*

## A Man's Background

In picking commercial drivers, we must use every means at our disposal to eliminate undesirables. One way to hire the right man for the job is to learn as much as you can about the applicant's home life.

How does he get along at home? Is the home run on a cooperative basis? When you call his home, how about the loud background noises of radio and TV? These could be an index to his way of life.—*John A. DePew, Director, Safety and Personnel, Dohrn Transfer Co. (Fleet Problems)*

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Elected at the 47th National Safety Congress

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#### For Women

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Chairman: Howard Pyle, President, National Safety Council, Chicago.

Vice-Chairman: John Stilwell, Yonkers, N. Y.

Trustees whose names are marked \* were elected for a three-year term. Others on the list carry over from previous elections.

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Frederick W. Ecker, President, Metropo-

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**New home of Nuclear Metals, Inc., at Concord, Mass., is H-shaped, constructed of concrete, cinder block, and steel, and is completely surrounded by strip windows for maximum natural light. Penthouse with large and accessible door houses air compressors, water-cooling equipment, and vacuum-cleaning turbines. When servicing ventilation system, maintenance force can move equipment directly from elevator landing to roof.**

## Planning a Safe Nuclear Facility

**Every protective measure for normal operation must be intensified when handling radioactive materials**

VAST ADVANCES in scientific research and development during and since World War II have contributed to rapid obsolescence of many industrial fire and safety programs formerly considered adequate.

Constantly growing use of toxic, reactive, pyrophoric, and radioactive materials—a short time ago merely laboratory curiosities—has forced extensive reappraisal of almost all features of building planning and relocation.

**By JOHN C. SANTANGELO**  
Safety Director, Nuclear Metals, Inc.,  
Concord, Mass.

Our firm, Nuclear Metals, Inc., has been active in development of metals and ceramics for atomic energy and other advanced technical fields since 1942. Much of NMI's work—conducted for the U. S. Atomic Energy Commission, the Department of Defense, and private industry—involves research and development of materials for missiles, air frames, and other components.

Evolving into NMI from the Metallurgical Project of the Massachusetts Institute of Technology, the operation had expanded and relocated several times, finally exposing its need for an adequate modern facility. A 30-acre site at Concord, Mass., was chosen.

While various building plans were being considered, the Safety Department made a study of accidents and fires that had taken place at other installations working with nuclear and allied materials.

The Atomic Energy Commission provided helpful information concerning causes and prevention of many of these accidents. Plans were then drawn that would combine maximum safety and economy for all operations. At the end of 1958 the new building was ready for occupancy.

Moving 25 miles from the Cambridge plant to the new facility was an ominous problem. Production schedules in some cases did not agree with moving schedules. These, in turn, had to coincide with the contractor's schedule to reinstall equipment. Strict adherence to a detailed, coordinated plan was demanded, but relocation was completed in about two months.

A considerable quantity of radioactive material, a large percentage of it uranium metal in the form of heavy billets, required careful handling to prevent contamination, radiation exposure, and airborne dust during moving.

The billets of uranium were



wrapped in heavy polyethylene sheet secured with masking tape to eliminate the possibility of airborne dust and contamination by contact to other surfaces.

An open, flat-bed trailer was used, its floor covered with 1/4-in. sheets of plywood taped at the joints with 3-in. masking tape. A fork lift truck, with padded forks to keep the polyethylene sheet from tearing, picked up the billets and loaded them on the trailer.

The heaviest billets were rolled by hand to the center of the truck. Boxes and barrels of other type materials were placed on the outside edges. The open trailer facilitated loading from any position, with packed containers surrounding the uranium and acting as shielding material.

This method of loading the billets proved to be practical, safe, and economical. The radiation level, measured 1 ft. from the truck, was less than 1 mr/hr.

Once loaded, the truck was covered with heavy tarpaulins and marked with large signs: *Caution—Radioactive Material*. An escorting company vehicle carried Safety Department personnel with instruments and equipment to cope with any emergency that might occur on the highway.

Two of these trips were necessary, neither involving flammable materials or pyrophoric powders. These were moved in small quantities by Safety Department personnel at a later date.

Special nuclear materials (enriched uranium) were moved in the same manner, with the aid of *bird-cages* and other control equipment, under the direction of the special nuclear materials control officer.

When the materials arrived at Concord, they were moved directly into specially-built storage buildings. When the plywood was removed from the trailers, the trailer bed and the tarpaulin covers were surveyed with an alpha survey meter. No detectable radiation was found.

In safety discussion, three broad divisions may be made when describing the nature of the work at NMI: research and administration, fabrication (heavy equipment), and building services. Each of these requires adequate floor space, serv-

ices, and lighting, but each has different safety requirements.

The area for administration and research had to be kept apart from production because of possible smoke and noise. Logically, building services should be in a position to facilitate piping and wiring to both areas.

The most practical layout for these requirements proved to be an H-shape. The center portion of the H was planned to be a service area, housing boiler room, cafeteria, toilet facilities, locker rooms, power

intake, communication center, elevators, and a dispensary.

One side of the H would be devoted to administration and research and the other to heavy equipment and fabrication. In a facility arranged this way, materials handling is simplified.

**Ventilation.** Ventilation was considered the most important service function of the entire installation because of extensive work with radioactive and toxic materials. The

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Planning safety and fire protection details at new facility are, left to right: John C. Santangelo; Dan Hayes, chief, AEC Safety and Fire Protection Branch; Dr. A. R. Kaufmann, technical director, NMI; Harry Patterson, chief, Concord Fire Department; F. L. Brannigan, safety and fire protection engineer, AEC.

Safety department exhibits, held frequently for both employees and townspeople, show types of protective equipment needed.

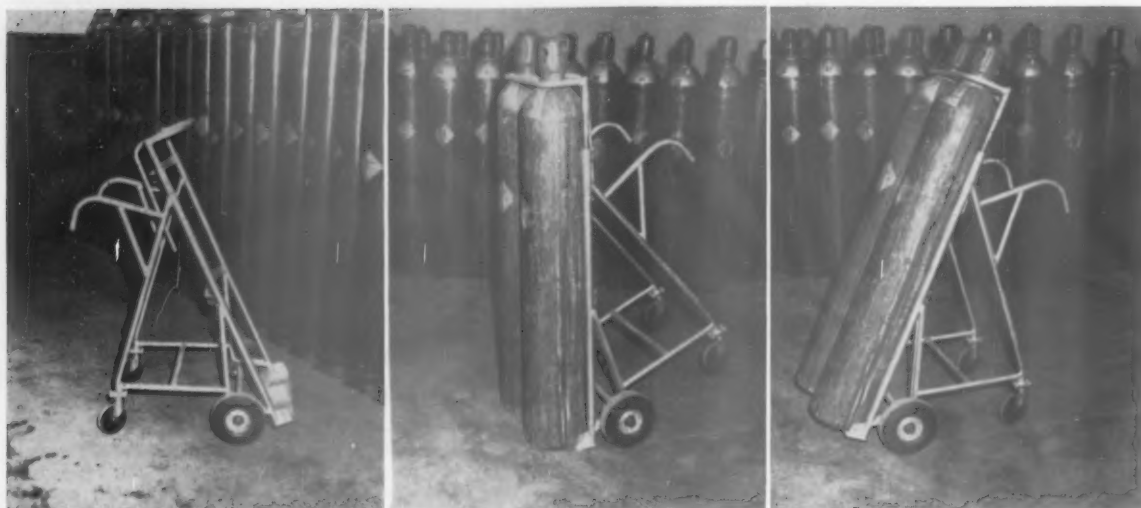


## IDEAS THAT WORKED

Devices and Ideas to Help  
Your Safety Program

By Arthur S. Kelly, Industrial Department, NSC

### Handling gas cylinders



#### WINNER IN OCTOBER

The prizewinning idea in the October issue was "Picture of a Safe Worker." H. Arnold Perkins, Western Electric Company, Point Breeze Works, Baltimore, Md., submitted the idea. Each week two employees are photographed with a Polaroid "picture-in-a-minute" type camera. The print is placed in a folder with the words "picture of a safe worker" printed on the front. The supervisor gets a chance to talk to the employee when he presents it, and the employee can show the folks at home where he works.

COMPRESSED gas cylinders, empty or full-charged, have always presented a serious threat to personnel and property in industry. Many types of carriers have been devised. We think the one shown here is one of the best.

It was developed at the Lamp Metals and Components Department, Cleveland Water Plant, General Electric Company. The materials used include standard sizes of pipe, wheels, casters, and steel plate.

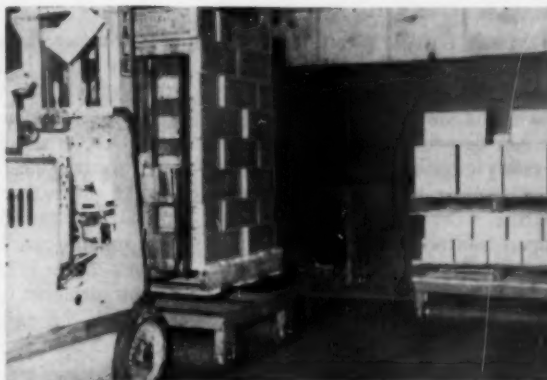
Note the pipe used for the front uprights is larger in diameter than the pipe forming the yoke which fits around the cylinder head. This permits adapting the cart to cylinders of varying links or heights. A rod bent out and hanging vertically from the back of the yoke makes adjusting to the proper height much easier. Submitted by H. V. Hodick, safety engineer.

ANY idea that makes it unnecessary to drive power trucks onto freight elevators is worth considering. We think we have an excellent idea to present here. Pallet rollers, as shown, operate in a  $\frac{1}{4}$ -in. track fastened to the elevator floor and never leave the elevator car. The operator pushes the empty pallet roller close enough to the floor landing to allow a fork lift truck operator to drop or pick up a load without any part of a truck entering the elevator car.

Refinements on this rolling pallet, not shown in the illustration, include a  $\frac{1}{8}$ -in. steel skirt guard all around to prevent an employee's foot being run over.

The pallet is 35 by 42 in., with 36-in. rollers. The frame consists of  $2\frac{1}{2}$  by  $2\frac{1}{2}$  by  $\frac{1}{4}$ -in. angle iron. The roller is standard 6-in. pipe stock with  $\frac{1}{2}$ -in. steel heads cut and welded into the ends. The axle is  $1\frac{1}{4}$  by  $41\frac{1}{2}$ -in. shafts also welded to the heads. The legs are 6 by 8.2-in. channel stock.

## Pallet roller



## Kick presses

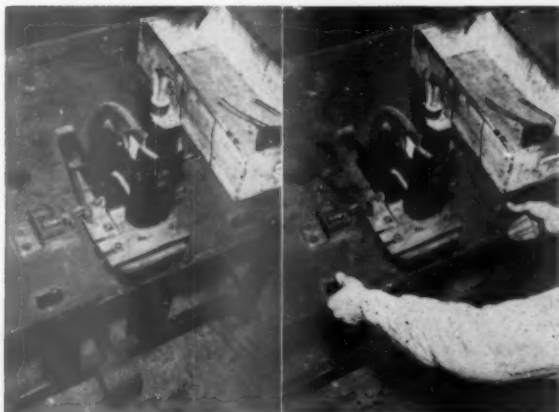
SAFE operation of kick presses requires good synchronization between the operator's hands and feet. On a repetitive operation such as that performed on kick presses, fatigue, distraction, and

chance-taking often result in smashed fingers. The illustrations show how Mamco Corporation, Racine, Wis., eliminated the hazard.

A "dog," fastened to the bolster and linked to a cylindroid, is activated by a two-hand electric cylindroid switch wired in series, with a spring connection between the dog and the frame of the press. In normal nonoperating position the spring holds the dog in position to prevent the press from being operated.

Depressing the switch buttons causes the cylindroid to pull the dog out of position so the press can be operated. When the switches are released, the coil spring pulls the dog back in position, locking the treadle arm.

This device, submitted by A. C. Speckman, maintenance foreman, can be cheated. Supervisors must accept the responsibility for making certain the operator does not tie down one of the buttons.



LOCKED

READY

# Tomorrow's Safety Targets

We'll reach them when men want to do a better job.

Here are five drives that influence their conduct

ONE CAN'T work toward safety by reasoning that we must have safety because it's good business; that it pays off in dollars and cents. The fact can be proved by any manager or safety engineer. He has only to recite two or three case histories, like the story of the experienced clipper transport driver of another company who recently took a turn too fast. The entire unit jack-knifed, rolled, and became enveloped in flames.

Total cost of the mishap up to now for medical expense, death benefit, and equipment and cargo is more than \$45,000, with claims still to come. Obviously, poor business simply for taking a turn too fast. And this point I am not debating. There are substantial savings to be made where good safety records exist. But this is not the *reason* for safety; it is the *result* of safety. If safety is practiced—for whatever reasons impel a man—the dollar gain will take care of itself.

Several months ago one of our drivers told me he was proud and happy to work with us, because the only thing he had to fight was the road—not "mental hazards." He explained: he didn't have to meet a "schedule." In the final analysis, he believed it was he who determined his schedule by conditions.

Yet I know Kels Kelsey, our motor transport manager, would tolerate no unwarranted looseness in operating schedules. This sounds like a small point, but in the mind of the driver it loomed large.

Other "mental" hazards can be eliminated.

There are companies other than

ours where a driver has only to report he hit a chuck hole with his front wheel, and the possibly damaged tire is removed and put to the rear. Drivers should not be required—by moral suasion or otherwise—to take out a truck that isn't ready to roll; and the driver is judge. An atmosphere can be created where a truck driver is likened to the pilot and his airplane; when a truck leaves the yard, the equipment should be right and the driver should be right.

One driver's feelings have been described and several human relationships have been suggested. What do they add up to? What in its larger, broader aspects makes a man want to do a good job on safety and every other phase of his assignment? Of course, he must be directed and encouraged by supervisors who have a keen interest in the subject. That is first and absolute. Without interest from the top, there can be no safety.

## What Motivates Them?

But beyond that, what motivates a man to strive to work effectively? Can you pay an employee to do a good job? No, in terms of money he can't be paid enough. It is far deeper than that.

We must accept the motivation studies of the industrial psychologists who come to inescapable conclusions that there are more compelling factors that affect working attitudes. These are the drives that profoundly influence a man's conduct. You've heard them listed before, maybe with different words and in different order, but every one of us should review them frequently:

First, there is man's sense of *dignity*, the conviction that he has basic human rights which others must respect. These are complex emotions involving self-esteem, the desire for self-expression, and the satisfaction of attaining a useful place.

Second, there is the need for

*esteem of others*. It is the "recognition" that every man craves.

Third is the basic *instinct for survival*; the assurance that a man and his family can obtain food, clothing, housing and necessities demanded by decent standards.

Fourth, there is man's desire for *security*. It isn't enough to meet his needs today. He wishes assurance about the future.

Fifth and finally, all men have their *social instincts*. They naturally tend to associate with their fellows and to develop teamwork in common undertakings.

These tendencies are deeply rooted in the nature of man, and they are of vital concern to us because they influence his conduct. If we can create a situation which meets these needs, men are happy, cooperative and productive. When these needs are not met, men become morose and bitter. Their attitudes become a measure of productivity and growth of a company.

Of course, human relations is not the sole factor in industrial health. General economic conditions, specific competitive situations, and the technical competence of a company's personnel are vital factors. But the human equation, so far as safety is concerned, is the most significant.

For a number of years I worked with A. P. O'Kane, now retired, but for years the manager of Standard's Cost Control Department. Art O'Kane used to say: "The most effective device to control costs is supervisory concern with costs."

This thinking applies to everything we do. And nothing could be more true than its application to safety. To reach "tomorrow's safety targets" the most effective device is supervisory concern with safety—supervisory concern with motivating everyone through a solid, thoughtful human approach to want to do a good job.

## By DARWIN F. GODFREY

President, Signal Oil Company, Los Angeles. From an address before the Southern California Oil Industry Safety Conference, sponsored by the Western Oil and Gas Association, April 1959, Long Beach, Calif.



# SMALL BUSINESS and ASSOCIATIONS



By A. M. Baltzer and John T. Curry

Small Business Program Staff, National Safety Council

## Multipliers for Safety

A recent tabulation of 164 associations with whom we have had contact in the past few years indicates that practically all of them have at least a definite interest in occupational safety or have gone into it with limited activities.

More encouraging is the fact that 57 per cent have enough long-range activities to constitute a "balanced safety service." Such activities include safety committees, safety publications, training courses, libraries, statistical service, and contests. Fifty associations have such complete and effective programs that they qualified for our Association Safety Award.

Of the 164 associations, 120 are members of the Council, although the Council has additional members who are not numbered with the 164 because they are still in the "inactive" stage. Of special note is the fact that 35 associations (21 per cent) also engage in non-occupational activities for the benefit of their members, their customers and the public.

## Association Awards Presented at Congress

All of the nine trade associations which won our 1959 Association Safety Awards were honored at the National Safety Congress in presentations made at sectional meetings. In addition, several have also arranged for special presentations at their own conventions. The following was the schedule of presentations at the National Safety Congress.

Automotive & Machine Shop Section, Wednesday, October 21, Hilton Hotel: *Can Manufacturers Institute*.

Food & Beverage Section, Wednesday, October 21, Sheraton Hotel: *Wisconsin Cannery Assn.*

Public Utilities Section, Wednes-

day, October 21, Hilton Hotel: *American Gas Association*.

Marine Section, Monday, October 19, Morrison Hotel: *American Waterways Operators, Inc.*

Metals Section, Wednesday, October 21, Hilton Hotel: *Institute of Scrap Iron & Steel Inc., and Steel Plate Fabricators Association*.

Trades & Services Section, Wednesday, October 21, Morrison Hotel: *National Association of Refrigerated Warehouses, Inc.*

Wood Products Section, Thursday, October 22, Congress Hotel: *British Columbia Lumber Manufacturers Association and Northern Interior Lumbermen's Association*.

## Grand Tour

Following our survey of accident costs and safety activities, the National Screw Machine Products Association organized a safety com-

mittee, which is really swinging into action.

Harry C. Johnson, staff representative for the Automotive & Machine Shop Section, completed visits, at the Association's expense, to plants of the committee members in Chicago; Hartford, Conn.; Hudson, Mich.; and Elyria, Ohio, for the purpose of discussing long-range safety activities for the Association. He then made a complete report to the Association's staff at Cleveland, which will help the committeemen plan future activities.

## Again—the Big Small-Business Problem

According to *Supervision* magazine, a small business is considered to be one that employs fewer than 500 persons and is not dominant in its field. One large steel company making a study of its 30,000 suppliers discovered that between 96 and 97 per cent were in the small business category.

Of the 4,300,000 businesses in existence in the United States last year, 4,000,000 were small businesses. They provided nearly two-thirds of the total employment in the country, and close to half of the total dollar volume of business.

## This Should Slow Them Down



MOTORISTS driving in and out of the main entrance at Kelly Air Force Base, Texas, are cautioned by this banner stretched across the road.

# INDUSTRY Takes Safety to the COMMUNITY

This company extended its off-the-job program not only to its employee's homes, but to their neighbors' homes, and found out that it pays to be a good neighbor



Sam McKay emphasizes a safety point by presenting a bucket to a housewife with the admonition, "Put it away where your husband won't kick the bucket." Humor makes message stick.

MANAGERS concerned about a "deteriorating corporate image" have, in their present setups, the raw material for building good will in their communities.

That raw material is to be found in the safety department. There is nothing mysterious or even new about it. It's just accident prevention techniques shared with one's neighbors.

It doesn't take an inflated budget

By JAMES D. SAUL

and a multiplied staff. The process resembles more the pushing of a snowball down hill.

A five-foot-five bundle of energy named Sam McKay, who is area safety supervisor for Pennsylvania Bell Telephone Company, is showing how it is done. McKay planned a community safety program so full of good-will potential that department heads in his company competed with each other for the privilege of paying for getting it started.

Someone once asked Sam McKay to make a speech on home safety. His answer was an immediate *no*. He tempered it with a request that he be allowed to think it over. He did think about it, and the next day he told his assistant, "Go over to Wanamaker's and buy me a 12-qt. bucket, a mop, a throw rug, a wall model can opener, a pair of roller skates . . . and on through a shopping list that ran to some \$55 worth of assorted house-



Blindfolded child cannot identify direction of auto horn sound. Telephone company employees have chance for community contact.



Dialo, safe driving game, is shown to school children by telephone company employees and workers from civic groups.

wares, furnishings, and toys. Being preoccupied with his plans for the home safety meeting, he neglected to explain how these artifacts had anything to do with accident prevention. For a while, his associates thought he was a victim of overwork, or worse.

When he arrived at the meeting, though, it soon became obvious that Sam McKay was crazy like a fox. He called a woman to the platform, showed her a bucket, and asked her if she had ever used one like it. She had, of course, and after a little patter about where she left it when she was through with it, Sam admonished her to make sure she never left it on the basement stairs because the old man might kick the bucket. Then he made her a present of the new pail and called up the next winner. The pattern for giving away the throw rug to a grandmotherly type might go this way:

"What is this I'm holding?"

"A throw rug."

"Do you know why it's called a throw rug?"

"No."

"Well, someday if you get in a hurry and step on one, you'll get thrown, and then you'll know. A broken hip would keep you out of action for a good long time, so tell you what I'm gonna do. I'm gonna take this 60-cent chunk of sheet foam rubber, place it under the rug, and with one easy motion . . . it's no longer a throw rug—it won't slip. Here, it's yours, and I wish you safe walking."

A man whose name is drawn for a door prize is asked, "How much do you think this stepladder would cost you down at Black's Hardware?"

He usually guesses a little high, then is told the right price and asked to compare that with the expense of medical treatment, and, if he is an hourly worker, to the cost of missing work.

A child, upon being presented with a door prize of roller skates, is reminded not to skate in the street or roll down a driveway into the street. The child's parents are urged to take away the skating privilege if the child forgets too often.

Every door prize is good for a safety lesson. A housewife who

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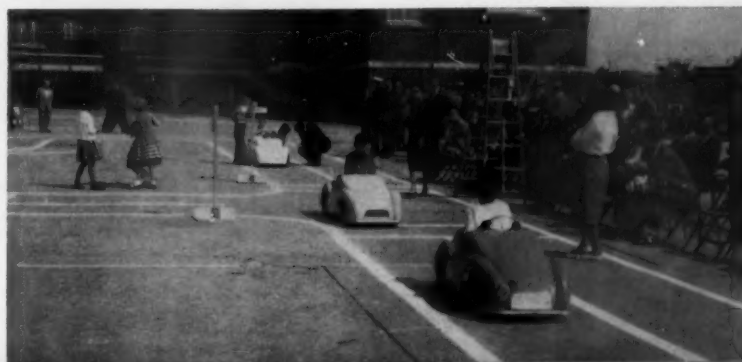
Men wearing eye cups try to put tooth powder on a toothbrush, separate flat shoe-laces from round, light cigarette. Some are amused at their clumsiness, others grim.

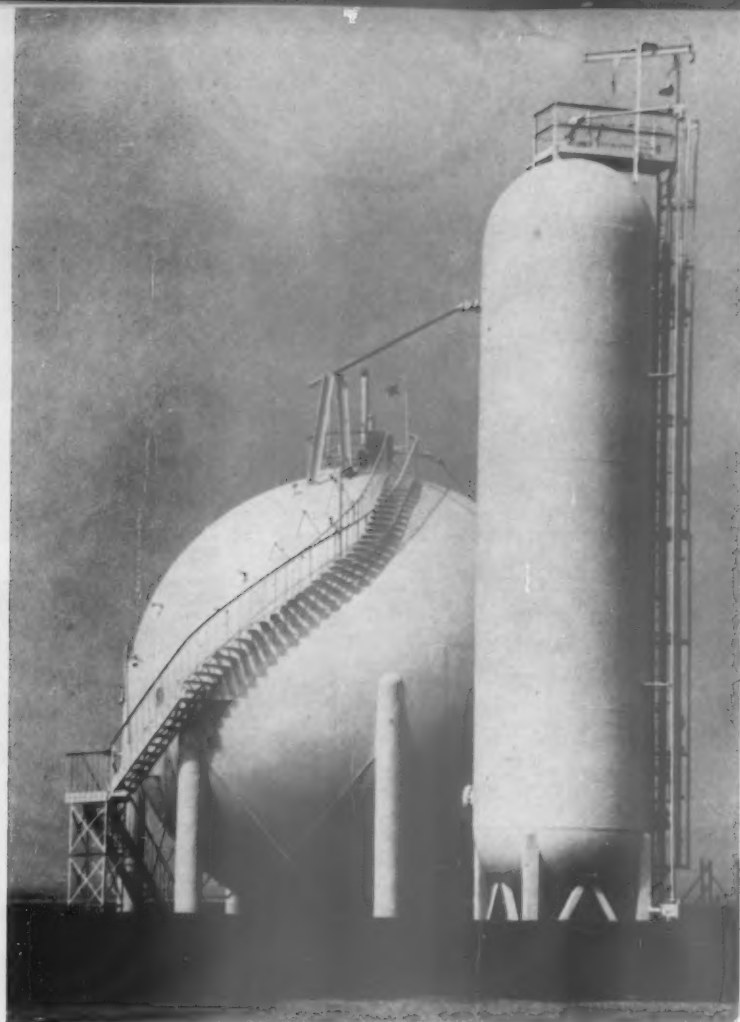


While schoolmates chant "one, two, three . . ." as seconds pass, a boy tries to retrieve ball in "street." Hoop rolling toward him represents automobile wheel.



Dalibor W. Kralovec, assistant director in charge of safety of the School District of Philadelphia, and Vice-Chairman of NSC's Safety Education Supervisors Section, watches while patrolman teaches Bregy School children traffic safety fundamentals. Below, children take pedal cars around full scale course laid out on school playground.





Household installation using ICC cylinders, each holding about 20 lbs.

Large sphere and vertical blimp for storage of iso and normal butane at a West Texas natural gasoline plant.

## LP-Gas at Your Service

Between production and ultimate use this useful fuel  
must be stored in containers built to exacting standards

STORAGE CONTAINERS for LP-Gas vary in capacity from cylinders of about 1-qt. capacity to aboveground pressure tanks of about 500,000-gal. capacity. Even larger storage is used, in the form of cavities dissolved from salt formations or mined in a suitable underground formation. Capacities of these range to 50,000,000 gal.

The design and fabrication of LP-Gas containers are usually in accordance with nationally recognized codes. The principal ones are:

1). American Society of Mechanical Engineers *Code for Unfired Pressure Vessels*.

2). Interstate Commerce Commission *Specifications for Pressure Cylinders*.

3). American Petroleum Institute Standard 620 *Recommended Rules for the Design and Construction of Large, Welded, Low Pressure Storage Tanks*.

Installation of containers and appurtenances, accessories, and piping is governed by various national, state and municipal standards, depending on the type of installation. Principal nationally recognized standards include:

1). National Fire Protection Association No. 58 *Standard for the Storage and Handling of LP-Gas*.

**By GEORGE R. BENZ**

Manager, Engineer Department, and

**C. C. ANDERSON**

Engineer, Engineering Department, Phillips Petroleum Company, Bartlesville, Okla.



*age and Handling of LP-Gases.* This standard applies to installations at homes, farms, commercial and industrial plants, containers and pertinent equipment mounted on trucks, semi-trailers and trailers transporting LP-Gas, fuel containers for LP-Gas used as motor fuel, portable containers for miscellaneous utilization of LP-Gas, installations for dispensing of LP-Gas as a motor fuel and installations on mobile equipment for using LP-Gas for cooking, heating and refrigeration.

2). National Fire Protection Association No. 59 *Standard for the Storage and Handling of LP-Gases at Utility Gas Plants.* This standard covers installations at utility gas plants.

3). American Petroleum Institute Standard 2510 *The Design and Construction of Liquefied Petroleum Gas Installations at Marine and Pipeline Terminals, Natural Gasoline Plants,*

*Refineries, and Tank Farms.* This standard applies to LP-Gas installations at marine and pipeline terminals, natural gasoline plants, refineries and tank farms. These types of installations are specifically excluded by NFPA 58 and 59.

Most states and municipalities have patterned their codes or standards after the aforementioned national standards. However, there are a number of exceptions. Consequently, it is necessary for the design engineer to review applicable regulations before preparing plans and specifications for any LP-Gas storage system.

Storage requirements of the LP-Gas industry vary widely as to type and size. Consumer storage will range from small portable cylinders and permanently located tanks of 100 to 1,000-gal. capacity for

household or farm use, to one or more 30,000-gal. tanks for large industrial users, and larger for utility users.

Distributors' storage may vary from one or more tanks of about 1,000-gal. capacity to one or more tanks ranging up to the common 30,000-gal. size. In some cases larger sizes have been used.

At natural gasoline plants and refineries where LP-Gas is manufactured, and at tank farms, pipeline and marine terminals, larger tanks have been in use for many years.

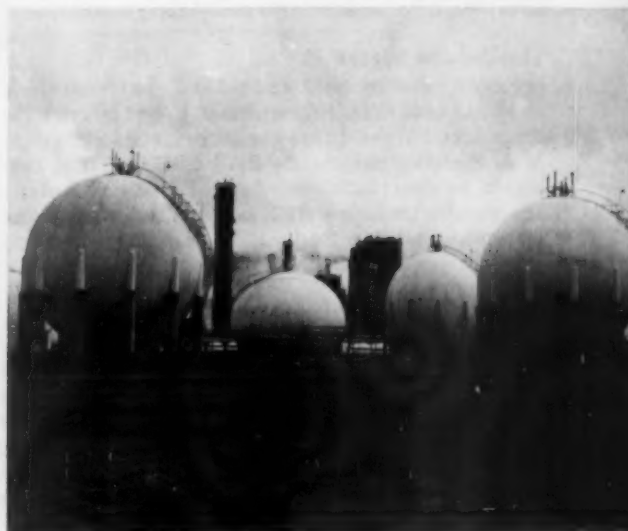
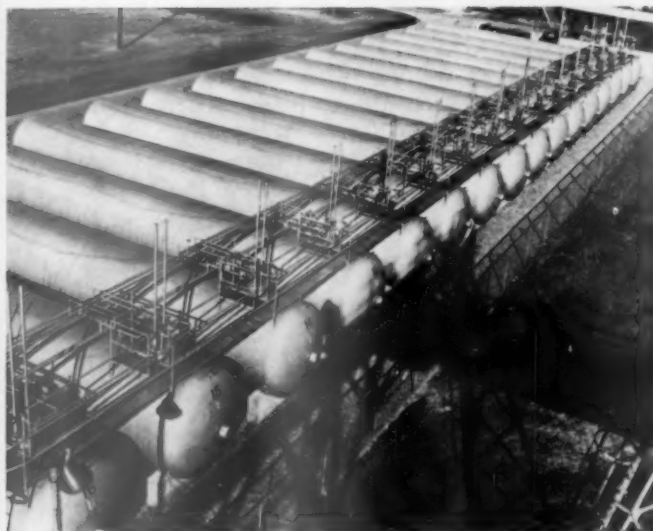
The earliest pressure storage vessels used at refineries and gasoline plants were cylindrical tanks of riveted construction. These tanks were usually erected horizontally, but in some cases were placed vertically to conserve space.

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**Right:** Typical LP-Gas household installation at which deliveries are made by tank truck.

**Lower left:** Battery of 30,000-gal. tanks for storage of propane at a large industrial plant.

**Lower right:** Large spheres and spheroids for storage of LP-gas and light hydrocarbons at natural gasoline plant.





# news briefs

## **Carbon tet cure?**

Studies of drugs that block the action of carbon tetrachloride in the nervous system may eventually provide an antidote. There is apparently a chain reaction in the system involving discharge of adrenalin, which in turn impairs liver function. Body fat is broken down, too. Further results are to be announced, as the research is still in progress.

## **Poisoning first aid**

An adhesive-backed chart of first-aid measures for poisoning was bound into the employee magazine published by Weirton Steel Company, Weirton, W. Va. The chart covers solid poisons, inhaled poisons, skin contamination, eye contamination, injected poisons (scorpion and snake bites), chemical burns, and how to prevent poisoning accidents. Space for emergency telephone numbers is provided.

## **Dust cleaning simplified**

The weekly cleaning of dust collectors was a slow, dangerous job done from a stepladder before someone with ideas went to work on the job. A platform was installed to make access to the collectors easy, and now the falling hazard has been practically eliminated. Time saved soon paid for the cost of the platform, and it can now be considered to be earning money for the company.

## **Standardize horses**

Horses are to be standardized, but turf fans need not fear their high-spirited beasts are to have their blood lines diluted with draft animal stock. It is vaulting horses, the kind used in gyms, that are to be made uniform. Several types of athletic equipment are being studied to make international competition easier for judges and less confusing for athletes.

## **Safety observers**

At Westinghouse Electric they select employees who take a five-session training course on the main points of shop and office accident prevention to qualify as "Safety Observers." Once a month they take additional training. Observers see to it that people in their sections use common sense and follow safety rules. There is about one Safety Observer for every 100 employees. After

six months or a year of service as observer, the employee turns in his Safety Observer pin for a Past Member's pin. Westinghouse discovered in 15 years of operation under the Safety Observer plan that the accident rate is lower in plants where the system is in operation. More than 10,000 people have completed the training course.

## **Safer way pays**

At Armco Steel, caustic was dumped into wire-cleaning tubs with a rope sling. This caused messy and dangerous splashes. Their new way is to clamp a steel band tightly around the drum, and raise it by remote control from a distance with an overhead crane. The job is so much easier that the time saved is estimated to have paid for the improvement in a year's time.

## **Indifferent to incineration**

Alan Darling, who sells fire extinguishers in the Cleveland area, was returning from Mansfield, Ohio, when near Medina he saw a man beating out a grass fire. He grabbed a dry chemical extinguisher and soon had the fire under control. He explained, though, that the man should call the fire department and have the area soaked, since dry chemical wasn't meant for grass fires, and it might flame up later. The wind was blowing toward the house. They waited half an hour, but the fire department didn't show up. Mr. Darling asked the farmer if he would like to buy an extinguisher, considering the slow fire protection service. The man answered that he really should, since only two years ago he had lost a house and outbuildings, but no, he didn't think he would get an extinguisher just yet.

## **Choppers are safe**

The world's largest helicopter airline, Chicago Helicopter Airways, recently marked its tenth year of operation without mishap. The firm has moved 25 million pounds of air mail more than 4,000,000 scheduled miles during 72,000 flight hours in that time. They currently carry 20,000 passengers a month a distance of 70,000 scheduled miles.

*Jim Saul*

# CONSULTATION CORNER



Questions on accident prevention, fire protection and occupational hygiene are answered by mail.

A few are selected for publication

By L. C. SMITH, Industrial Department, NSC

## Counseling Accident Repeaters

**Question:** We're thinking about starting individual counseling with those employees who seem to be accident prone, or at least continue to have accidents on the job.

Most of us are in agreement as to the wisdom of this type of counseling, but we're also in the dark as to how this rather personal talk is to proceed.

**Answer:** First, try to avoid the term "accident prone." "Accident repeaters" is more definable and, perhaps, more accurate.

It's a wise choice to counsel your accident repeaters. We feel you're in the best position, as director of safety, to offer such counsel and can get the results you want without resentment by the employee.

One way to proceed with this counseling is to call the employee to your office privately. Explain to him that the purpose of this chat is not to reprimand or discipline him, but to try to help him remedy a situation that has come to your attention. Simply explain to him that he is having more than his share of accidents and that, frankly, you are concerned about it.

You may detect a slight sign of resentment at this point, but show him the facts of his first-aid visits, medical care cases, etc. His resentment should fade.

The mere fact that he knows that he is having more than his share will cause him to *think* about it. This will usually have a favorable effect and, in some cases, will be sufficient to reduce the accidents.

Ask him if he has any idea why he's having accidents. In all probability he will reply he doesn't know why. This will make him think even more seriously about the matter.

There is a possibility that there

is something wrong physically with the employee, such as faulty vision. Ask him to take a physical exam to help determine any disorders, faulty vision, hearing, etc., which may be causing difficulty.

You may want to walk through the work area with him to determine if you can discover any contributing factors. It's a good idea to bring the problem to the attention of the foreman, and talk it over with the foreman and employee. At this point, solicit the help of the foreman. The result of this chat may throw some light on the problem.

You might suggest that the employee be appointed to the safety committee or take a first-aid course or something of a similar nature to make him an active participant in the company's safety activities. Then follow up after counseling to see how he is getting along. Let him know you're interested in him.

## Close Oxygen Valve or Acetylene Valve First?

**Question:** I'd like to take issue with Rule 9 of *Safety Instruction Card No. 476*, published by the National Safety Council. This rule states: "If a torch flashes back, or burns back inside the blowpipe, immediately shut off the torch oxygen valve, then close the torch acetylene valve."

It has been my experience for several years as a welder and a welder instructor that the acetylene valve should always be closed first. My reason for this is, when the oxygen valve is closed first, it leaves the acetylene to burn inside the torch body. This is especially true, if there's a leaking valve.

On the other hand, if the acetylene valve is closed first, it gives the oxygen a chance to blow the burning acetylene out of the torch.

Also, almost always, if the oxygen is cut off first when the acetylene is burning inside a torch, there will be an explosion or serious heat damage to the torch.

There may be good reasons for this rule being written as it is, and, if so, I'd like to know what they are.

**Answer:** Our *Safety Instruction Card No. 476*, as well as other published safe practices for operating oxygen and acetylene cutting torches, stipulates that the oxygen valve should be shut off first.

The primary and perhaps only reason the oxygen valve should be shut off first is that generally the oxygen valve on a torch is partially throttled and can be shut off quicker, should a flashback occur, than the acetylene valve.

The acetylene valve, in most instances, is left wide open during normal operation. This is necessary in many cases to obtain full flow of fuel gas, especially when operating at relatively low fuel gas line pressures.

Since the fuel gas valve is normally wide open, it will take a greater length of time to close this valve in case of a flashback.

Frequently, time is an important element when a flashback occurs, since it is necessary to shut off one of the gases as soon as possible to prevent damage to a torch.

Laboratory testing, as well as general experience, has indicated that the degree of burn-back or sustained burning in a torch as a result of a leaky valve will be about the same regardless of which valve is shut off first.

If the valve being closed seals effectively, burning in the torch will be extinguished regardless of whether the valve being closed is the fuel gas or oxygen valve.

If the acetylene valve is closed first, the burning in the torch will be extinguished because of the shutting off of the combustible gas.

If the oxygen valve is closed first, the burning in the torch will be extinguished because of the lack of combustion-supporting gas in the torch. In the latter case, the free acetylene issuing from the flameport or ports will ignite in the presence of the flame or hot work and will burn in a normal manner outside the torch.



# AROUND THE COMPASS



## ACTIVITIES

## PROGRAMS

## EVENTS

By Nils Lofgren

Field Service Department, NSC

### Pennsylvania, New York Field Men Selected

Two new men have joined the field staff of the NSC Field Service Department. Gardner R. "Dick" Whitney is now district director for Pennsylvania. Robert J. O'Donnell is the new district director for New York.

Ed Bovich and Ed Smith formerly held these positions, respectively, but resigned recently to enter association work.

Dick Whitney comes to the Council as former manager of the Champaign, Ill., branch of the Chicago Motor Club, with which he served 11 years. Born in Somerville, Mass., he was graduated in 1948 from the University of Illinois with a degree in business administration. He will live in Harrisburg after the 1959 National Safety Congress.

Since 1957 O'Donnell has been executive director of the United Cerebral Palsy Association of New York. Previously, he had been director, Bureau of Public Information and Education, Department of Welfare of Pennsylvania, and was an assistant for public relations and planning to the governor of Pennsylvania. O'Donnell's home address is 579 Bay Ridge Parkway, Brooklyn, N.Y.

### Safety Briefs

Stanley G. Peck, who had resigned as manager of the Kalamazoo, Mich., Area Safety Council, has announced his return to this position.

Raymond A. Norwood, secretary-manager of the San Joaquin County Safety Council in Stockton, Calif., since 1956, will be managing director of the Seattle-King County Safety Council. The Seattle post formerly was held by William A.

Feathers, who resigned this summer to go into business.

D. B. "Burney" Broderick, first executive secretary of the Sioux Falls, S.D., Safety Council, suffered a fatal heart attack in that city on August 30. He was 41. Broderick

for the past 10 years was secretary-manager of the South Dakota Automobile Dealers Association. From 1946 to 1949 he served as that safety council's first executive secretary.

### Tulsa Council Hires Full-Time Director

At a September 15 meeting the Tulsa, Okla., Safety Council hired a full-time director and started an expanded program. The new staff man is William D. Highland, a University of Oklahoma journalism graduate and former managing editor of two Oklahoma papers. NSC President Howard Pyle and District Director Phil Streit attended the meeting at which this action was taken.

## When NSNews Was New

SINCE November 1959 marks the 40th anniversary of this magazine, we thought it would be interesting to take a look over our shoulder and see what was going on in a local safety council 'way back then. We chose Rochester, N.Y. Julien Harvey had just been assigned by NSC to conduct a six-month traffic safety campaign there. The results were so satisfactory that similar campaigns were advocated for other cities.

In 1919, with a motor vehicle registration of 27,000, nine traffic deaths were reported in Rochester. This year, when registration is 217,000, seven deaths have been reported.





# MANAGEMENT SAFETY POLICIES

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## Introduction

1. The attitude toward accident prevention on the part of top management in a company or a plant is almost invariably reflected in the attitude of the supervisory force; similarly, the worker's attitude is usually the same as his supervisor's. Thus, if the top executive is not genuinely interested in preventing accidents and injuries, no one else is likely to be. Since this basic fact applies to every level of management and supervision, an accident control program must result from top management's announced and demonstrated interest if employee cooperation and participation are to be obtained.

2. A company or a plant which attempts to stop accidents without a definite guiding policy—one which is planned, publicized, and promoted—will find itself continuously "fighting fires."

3. The details for carrying out an accident prevention program may be assigned, but the responsibility for the basic policy cannot be delegated. At the outset, controlling work injuries and accidents requires close executive attention because it is generally a new activity and procedure, one with which no one is completely familiar. Consequently, the over-all policy should state clearly the objectives to be achieved.

4. A management policy for accident prevention can be developed in one of various ways. Safety engineers or consultants, if available, can be of much help in formulating a suggested approach.

This Data Sheet is one of a series published by the National Safety Council, reflecting experience from many sources. Not every acceptable safety procedure in the field is necessarily included. This Data Sheet should not be confused with American Standard Safety codes, federal laws, insurance requirements, state laws, rules and regulations, or municipal ordinances.

5. One way is to delegate a member of executive management to initiate and give direction to the formulation of the policy and program. Assisting him may be one or more staff men who are familiar with the hazards of the company's operations. Another approach is to appoint a committee of departmental or divisional representatives to suggest policy standards and policy statements after they have consulted managerial personnel in their own units for ideas.

6. Whatever means are used, the most important step is that the highest level of executive management give its endorsement and stamp of approval to the policy.

7. Certain important questions should be asked and answered when a policy is being determined. For example, does management believe that:

- a. All personal injuries can be and should be prevented?
- b. A goal of "no injury" is realistic?

- c. It has the responsibility to prevent injuries?
- d. Special effort must be made to train all employees to perform safely?
- e. It is good business and sound leadership to prevent personal injuries?
- f. Employees should actively participate in the company's safety program?
- g. It is possible and reasonably practical to provide mechanical safeguards against those operating exposures which may result in injuries to employees?
- h. Prevention of injuries away from work is a logical undertaking for a business?
- i. Employees must be made to understand their personal responsibility for the prevention of injuries?
- j. A safe work environment is conducive to high-level performance?
- k. Organization and leadership are as necessary for results in safety as for results in production or sales?
- 8. Once direction is established, the policy as it emerges could well embrace the following factors:
  - a. Top management's position with regard to safety and interest in it, as shown by: the company's prompt action to eliminate unsafe conditions; acceptance of the employee's right to expect a clean, safe, healthful working environment; the provision of effective and practicable mechanical safeguards; the provision of personal protective equipment; the observ-

ance of all applicable laws, standards, codes, and ordinances as minimum requirements for safety; delineation of responsibilities for management, employees, and safety personnel.

- b. A suggested accident prevention organization for the supervisory staff and all employees.
- c. Recognition of the need for trained safety personnel.
- d. Written safe work practices and instructions for each job.
- e. Indoctrination of new employees in the company's policy for accident prevention.
- f. Motivation of employee interest in the program.

9. After the policy has been determined, it should be publicized so that every employee in the company becomes familiar with it, particularly with those aspects which apply directly to him.

10. For a number of years, safety engineers and administrators have sought a basic, universal accident prevention policy which any company could adopt.

11. With this goal in mind, it was decided to analyze policies of companies whose accident prevention programs had proven effective over the years. A survey was made of members of the National Safety Council's Industrial Conference. Statements of policy and related material from more than 40 companies were received and analyzed by a committee of the Industrial Conference set up for that purpose.

12. The committee broke down the data according to the various levels of management represented. A number of statements of policies which are now in effect in National Safety Council member companies follow:

### **Top Management Policies**

#### **Company 1**

"A good safety record is clear evidence of good management. Accordingly, general managers and other top divisional and plant executives will make safety their responsibility by:

- a. "Maintaining a comprehensive safety program at all times.
- b. "Meeting with key supervisory personnel at least once a month to review safety performance.

c. "Taking any action necessary to improve safety conditions.

"In thus giving its concrete support, management will imbue the entire organization with a continuing zeal for safety."

#### **Company 2**

"Working through the various operating departments, the objectives of the safety department are to help supervision to prevent accidents and fires; to eliminate personal injuries, occupational illness, and property damage; and to protect the general public insofar as they come into contact with our company or its products. Attainment of these objectives is essential in order to discharge the employer's moral and legal responsibility for safety, to maintain employee productivity and productive facilities at their optimum level, and to create favorable public opinion."

#### **Company 3**

"We recognize management's responsibility in providing the safest conditions for our employees. The efficiency of any industrial operation can be measured directly by its ability to control unnecessary loss. Accidents resulting in personal injury and damage to property and equipment represent needless waste.

"It is imperative that [all] with supervisory responsibility recognize the need for maximum safety. Their performance in this regard will be measured along with their over-all performance."

#### **Company 4**

"It is the policy of the company to take all practical steps to safeguard employees and customers from accidents and to maintain at all times an effective safety organization.

"Management has always been interested in accident control because it involves the safety and well-being of its employees. But management today recognizes that more than personal safety is involved, for the existence of accident causes is proof of a wasteful, inefficient operation; accidents lead to interference with work plans, customer complaints, dissatisfaction, and loss of good will. Accident control is thus essential for departmental morale and profitability, and is a prime

concern to each department manager."

#### **Company 5**

"The safety of employees continues to be the first consideration in the operation of the business. Working conditions should not only meet accepted standards for the protection, safety, and health of employees, but should be maintained in a clean and orderly state, so as to encourage efficient operations and satisfied employees."

#### **Company 6**

"The management considers no phase of operation or administration as being of greater importance than accident prevention. It is the policy of the company, therefore, to provide and maintain safe and healthful working conditions in all plants and operations, and to follow operating practices in a manner which will safeguard all employees and result in safe working conditions and efficiency of operation."

#### **Company 7**

"It is the policy of this company:

- a. "To avoid accidents with their attendant suffering, loss of time, and possible impairment of earning power.
- b. "To maintain neat, clean, safe, attractive and healthful working conditions.
- c. "To comply with state and local legislation pertaining to fire hazards, accident prevention, and working conditions."

#### **Company 8**

"Operating management believes that accident prevention and efficient production go hand in hand. All levels of management have as a primary responsibility the safety and personal well-being of all employees. This responsibility must be met by working continuously in the promotion of safe working practices among all employees and in the maintenance of plant and equipment in safe operating condition."

#### **Company 9**

"It is a company policy that every effort shall be made to prevent accidents and occupational disease. If, however, an accident does occur or an occupational disease is discovered, the best possible medical care

should always be obtained; and, within the law of the state, the injured employee should always be permitted to select his own physician (assuming he is qualified).

"There should be no attempt to 'cover up' an accident to improve the appearance of the safety record. Nor is any employee to be coaxed into returning to work if his physical condition is unfit for the job. His capability to return to work will be determined by the plant doctor. The welfare of the person should be given first thought."

#### Company 10

"When a man enters the employ of [this] corporation, he has a right to expect that he will be provided with a proper place in which to work, proper machines and tools with which to do his job, and that he will be able to devote his energies to his work without danger to his life and health.

"Only under such circumstances can the association between employee and employer be mutually profitable and harmonious. It is our desire and intention to provide a safe work place, safe equipment, proper materials, and to establish and insist upon safe methods and practices at all times.

"It is a basic responsibility of all those carrying executive authority to make the safety of human beings a part of their daily, hourly concern. This responsibility must be accepted by each one who conducts the affairs of the corporation, no matter in what capacity he may function."

#### Company 11

"Management has every desire to provide for its employees a safe working environment.

"To accomplish this, management will provide all reasonable safeguards to ensure safe working conditions.

"A need also exists for recognizing and following good safety principles. No job is so important and no order is so urgent that we cannot take time to perform our work safely.

"Employees are expected to use the safety equipment provided. Rules of conduct and rules of safety shall be observed. Safety equipment must not be destroyed or abused.

"The joint cooperation of employees and management in the observance of this policy will provide safe working conditions and accident-free performance to the mutual advantage of all."

#### Company 12

"Any safety program established for a large or small establishment must be comprehensive and well integrated so that each part reinforces the other parts, as well as adding effectiveness to the whole program. In order to accomplish this integration, the program must be designed to conform to a set of basic safety principles and sound management practices."

#### Company 13

"As chief executive officer of your company, I am greatly pleased that we are in the front rank in the promotion of employee safety, and I want all of you to know it is my definite policy, both personal and official, that everything within reason shall continue to be done throughout the company to maintain or better our position.

"I consider safety of personnel of first importance in our plants, laboratories, and offices, and I ask your full cooperation in making this policy effective."

#### Company 14

"Management at all levels [shall be] behind the safety effort."

#### Company 15

"Knowing that industrial injuries and loss of property through accident and fire are unnecessary and preventable, the company will take every reasonable precaution to prevent such occurrences.

"To accomplish this, the company will provide and maintain all buildings and equipment in good condition.

"Also, study will be given to the development of safe work methods, and employees will be trained in these methods.

"Then, employee interest in safety will be created and maintained through an organized promotional program.

"However, if an employee is injured in the course of employment, every effort will be made to restore him to sound physical con-

dition and to get him back on the job as quickly as possible. . .

"Every reasonable effort will be made to provide and maintain safe, healthful, pleasant, and sanitary working conditions and facilities."

#### Company 16

"It shall be the policy of the corporation to conduct all operations safely, to prevent injuries to persons and damage to property. Safety starts with planning and continues through design, purchasing fabrication, construction, operation, and maintenance. All practical steps shall be taken to maintain safe, healthful places of work by building in safety and healthful conditions. Adequate protective and corrective equipment shall be used to minimize the existing accident and health hazards."

#### Company 17

"The [management] concept . . . is not production *and* safety; it is production *with* safety. When production with safety is achieved, production with efficiency is attained simultaneously. Safety is a production tool. A poor accident record is an indication of improper thinking, and investigation of the accident experience usually will reveal many other mistakes which do not show up as personal injuries. A good safety program teaches how to avoid unsafe practices and promotes efficiency. Consequently, a good safety program and production records go hand in hand."

#### Company 18

"It is the policy of the company that every employee is entitled to a safe and healthful place in which to work. To this end, every reasonable effort will be made in the interest of accident prevention, fire protection, and health preservation.

"The member of management in charge at each location is fully responsible for the maintenance of safe and healthful working conditions and for setting up and carrying out an effective safety program. . .

"The company will try to maintain a safe and healthful work place. It will provide safe working equipment, necessary personnel protection, and, in case of injury, provide the best first-aid and medical service. Through its membership in the National Safety Council and through



its own safety activities, the company keeps abreast of the best safety information, so that its supervisors may be better able to prevent accidents and fires."

#### **Company 19**

"Accident prevention is closely related to the control of any other function. The causes of failure with regard to both are identical. The remedy for both (the enforcement of safe and efficient practice) is likewise identical. Accident prevention, therefore, requires no more and no less management and supervisory attention than problems of equal economic importance."

#### **Company 20**

"The corporation feels that accident prevention is a function of management and contributes to efficient production. Since safety and efficient operation go hand in hand, similar methods of control are equally applicable to accident prevention as are used to maintain quality and service. . .

"Of even more importance, the loss of earnings and physical injuries suffered by employees as a result of accidents are factors which in themselves justify a constant and intensive accident prevention program. Safe working conditions at all of our locations as well as a planned safety program both contribute substantially to the maintenance of harmonious employee relations and to profitable operation."

#### **Company 21**

"The [management] shall encourage and facilitate the elimination or control of all accident, fire, health, and occupational hazards associated with its activities in order to:

- a. "Maintain the health of employees.
- b. "Prevent injury, sickness, disease, death, work interruption, fire damage, and destruction of equipment, materials, and property.

"Comprehensive, continuous preventive and protective programs shall be developed and maintained as appropriate throughout all activities and operations subject to direction or control. These programs shall:

- a. "Stimulate the interest and assure the participation of man-

agement, supervisors, and other personnel in health, safety, and fire prevention and protection, and public safety matters.

- b. "Consider the unique health and safety problems of communities, plants, processes, . . . and production. . .
- c. "Take cognizance of the experience and accumulated knowledge of national health and safety organizations."

#### **Company 22**

"People are our most important asset—their safety our greatest responsibility. . .

"We can and we must operate our plants and offices without accidents. Safety is one of the most important responsibilities each of us has as a management representative. It is important because failure to succeed means emotional and financial hardships for some employee and his family, means loss of prestige for the company in the community, and can seriously affect the friendliness and cooperativeness of our work force. If we utilize to the fullest the talents of our management team, I feel certain our efforts to achieve accident-free operations will be successful."

#### **Company 23**

"We believe, as a result of our years of experience, that the continued prosecution of an effective safety program is an integral part of good employee relations and ranks in importance with production, operating costs, and product quality."

#### **Company 24**

"The safety of our employees is a major consideration in the operation of our plants. Management and supervisory personnel will be accountable for the safety of the employees working under their supervision and will be expected to conduct operations in a safe manner at all times. Also, management will be responsible for establishing safe working conditions. . .

"Accidents are a prime responsibility of management. In the eyes of the law, management is the employer and the employer is liable for anything that happens to employees in the course of employment.

"Whatever form the organization takes, it must function within defined policies, known and understood by the executive and operating personnel. . .

"The safety organization must serve as management's agent and have full support in providing a safe plant in which to work. Failure to provide these conditions will destroy the confidence of the men on the job, who have been told that management believes firmly in safety. . .

"Management provides the tools, equipment, and men to do the job—that of getting out the [maximum] quality production at minimum cost—and must not tolerate the abuse or loss of these items of production through accidents." To meet this responsibility, management should:

- a. "Establish, publish, and carry out the stated company policy of safety.
- b. "Provide an efficient safety organization with an effective accident prevention program.
- c. "Provide a qualified safety director to administer the safety program.
- d. "Provide an adequate medical program and first-aid facilities, and keep significant records of treatment given.
- e. "Review accident reports in order to keep informed of the accident experience trend in the plant so that the effectiveness of the program [may be judged] in order to give added impetus to any portion of the accident prevention program deemed necessary.
- f. "Keep in close touch with safety committee meetings in order to aid the over-all safety policy, and assist in giving direction and authority to the committees' activities."

#### **Company 25**

"In general, the company's policy is to do all that is reasonable to prevent injury to persons and damage to property and to protect the employees, the company, the customer, and the public from the results of accidents and fire. In interpreting this policy, the company goes to great lengths to provide adequate safeguards against fire and accident hazards with proper equipment, ma-



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terials, methods, and trained and instructed employees."

#### Company 26

"Management has conscientiously accepted its responsibility for the prevention of industrial accidents. It feels an obligation to send each employee back to his home and family free from injury to his person or to his health. The company's formal program of industrial accident prevention dates back to 1908.

"Throughout this period, engineering standards have been established to provide the most practical mechanical protection possible.

"Accident prevention has been accepted as an integral part of manufacturing equipment and processes. As such, the prevention of accidents must be made a part of each job because, after all, accidents can be controlled by exactly the same measures as are needed to control quality, costs, or to meet any other manufacturing requirement. This calls for good engineering in the selection of equipment and methods, thorough instruction of the employee, plus day-by-day supervision that is both sufficient and efficient."

#### Company 27

"Industrial injuries are always costly to the individual workman and often disastrous to his future and the security of his family. They are also costly to the company, both in direct financial burdens and in the reduction of efficiency. It is the firm and continuing policy of the management of this company that industrial accidents shall be reduced or eliminated by the use of every reasonable mechanical precaution and by aggressive promotion of safe practices within the plant.

"Every employee has an important place in the accident prevention program and is expected to cooperate fully in the measures taken for safety."

#### Company 28

"Resident manager and staff are responsible for:

- "The safety program in its entirety to the same extent that they are responsible for productive output.
- "Developing and promoting the proper philosophy regarding the

importance of safety by evaluating each step in production in terms of safety."

#### Company 29

"Our company's safety program was formally organized to fulfill three fundamental requirements: (1) The will of both management and men to prevent accidents; (2) A safe working environment; and (3) Safe performance of the employees in that environment. Under this plan accident costs have been reduced and our accident rate has been brought down to a point well below that of other [plants in the industry]. Now our chief concern is to coordinate the wholehearted efforts of both employees and management to achieve further improvement.

"Safe practices on the part of the plant workers will in the future be integrated with all operations and working activities so that no job shall be considered efficiently completed unless the worker has followed every precaution and safety rule to protect himself and his fellow-workers from bodily injury throughout the operation.

"Plant management, on the other hand, is expected to mobilize every effort to improve plant working conditions until every physical hazard is minimized or completely eliminated. . .

"The plant manager accepts the responsibility for all accidents and, in addition to furnishing the impetus for the safety program, takes an active part in the functioning of the program. Plant management's specific duties and obligations for administering its part of the safety program are outlined below:

- "Put into actual practice the idea that production and safety are inseparable. Department heads must realize that no job is efficiently completed unless every safety precaution associated with the performance of that job is strictly complied with. Foremen and supervisors must understand that accident prevention is as much their responsibility as production or any other phase of their work.
- "Make safety a part of your periodic discussions with the department heads and supervisors.
- "Know the monthly accident ex-

perience in the plant by departments.

- "Keep informed of the predominating causes for accidents.
- "Be alert for unsafe practices and unsafe conditions when making trips through the plant.
- "Watch for the opportunity of passing on a bit of wisdom or instructional information to the department head concerned, when reviewing the minutes of a safety committee meeting.
- "Be convinced that the prevention of accidents is not the sole responsibility of the safety director, but the responsibility of every employee, with the greatest burden on the foremen and supervisors.
- "Take an active interest in the handling of cases requiring discipline."

#### Policy for Operating Head (Superintendent or Manager) Responsibility

##### Company 1

"The supervisor is the key man in the safety program because he is in constant contact with employees. Each superintendent should hold meetings with his foremen at least once a month to review safety conditions, general safety policies, and specific situations."

##### Company 2

"No foreman, supervisor, or operating head must be allowed to feel he is relieved of any part of his responsibility for safety; safety is an operating function and cannot be transferred to a staff organization. . .

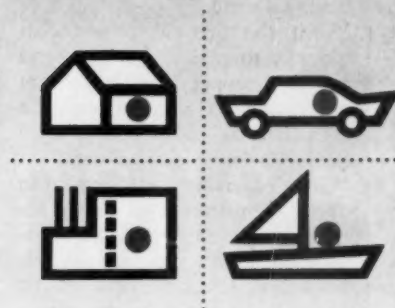
"The individual plant superintendent represents management in his plant and is expected to carry out the company safety policy effectively.

"To do this, he will:

- "Familiarize himself with the safety program and ensure its effective application in the plant.
- "Attend meetings of the plant safety committee and give full support to all committee activities.
- "Review the accident summary reports in order to keep informed on the plant accident record and insist on appropriate action when



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- accident trends are unfavorable.
- d. "Review serious accidents personally to satisfy himself that accident causes are being investigated and proper corrective action taken. This will tend to show the employees his active interest in accident prevention.
  - e. "When new operations are installed or new tools, equipment, and new materials are introduced into the plant, he will confer with the safety department to satisfy himself that all proper safety precautions have been taken for their safe use.
  - f. "Visit the first-aid room occasionally to review the work and see that supplies and equipment are maintained in good condition and that the company's medical policy is being carried out.
  - g. "Give leadership and direction in the administration of safety activities, fair consideration to recommendations, and interpret policies and support them as an example to those in the supervisory levels."

#### Company 3

"It shall be the responsibility of each manager, superintendent, supervisor, and foreman to ascertain that:

- a. "Each of his employees understands the chemical and physical properties of the materials stored, handled, or used by him.
- b. "The necessary precautions are observed, including the use of proper safeguards and means of personnel protection."

#### Company 4

"The heads of operating units will provide personal leadership in achieving satisfactory protection against mishap. They will interpret the company's policy and actively support it as an example to those responsible to them, giving safety equal emphasis and weight with matters of production, cost, and quality. Prompt and fair consideration shall be given to recommendations for protective equipment and other measures to reduce hazards."

#### Company 5

"Resident manager and staff [are to]:

- a. "Actively participate on safety committees to which assigned.

- b. "Take an active interest in organizational safety training programs.
- c. "Make frequent plant inspections.
- d. "Resident manager, or his assistant, section manager, and area superintendent participate in investigations of all major and submajor injuries.
- e. "Review the accident prevention program weekly."

#### Company 6

"[Our safety program] calls for the active participation of supervisors at all levels."

### Policy for Foreman Responsibility

#### Company 1

"Foremen should take the initiative in making a success of the safety program in their own departments. As a part of this effort, they should talk about safety to two employees daily for at least five minutes each."

#### Company 2

"It is expected that all responsible for our industrial operations assume full responsibility for absolute employee safety."

#### Company 3

"The success of our accident prevention program will depend on the sincere, constant, and cooperative effort of all supervisors [and on their] active participation and support in the following matters:

- a. "Provision of complete safety instruction to employees prior to assignment of duties.
- b. "Enforcement of all safety regulations in effect.
- c. "Continuous inspection for unsafe practices and conditions and prompt corrective action to eliminate causes of accidents.
- d. "Proper investigation of all accidents and prompt and complete reporting of same.
- e. "Personal attendance at safety meetings.
- f. "Promotion of employee attendance at safety meetings and encouragement of employee use of the safety suggestion system.
- g. "Becoming personally proficient in first-aid practices and urging employees to take first-aid training.
- h. "The development and administration of an effective program of

good housekeeping and the maintenance of high standards of personal and operational cleanliness throughout the operations.

- i. "Proper maintenance of equipment and the issuance of instructions for the reduction and elimination of fire and other general hazards."

#### Company 4

"Although top management has major responsibility for establishing definite safety policies, procedures, and safe working conditions, most of what is planned and established must reach the employee on the job by way of the first-line supervisor, who is in frequent and close association with employees.

"The first-line supervisor in discharging his responsibility for safety has among his principal duties the following:

- a. "To teach each employee what the hazards are on his job and how to avoid them. This is personalized safety training and requires the preparation of a Job Hazard Analysis for each operation.
- b. "To impart to each employee the understanding that violation of established safety rules will not be tolerated.
- c. "To see that needed safety equipment and protective devices are provided for each job.
- d. "To take prompt corrective action whenever unsafe conditions and unsafe acts are noted.
- e. "To teach employees that accidents are caused and they can be prevented.
- f. "To investigate and find the cause of all accidents, even those which result in minor injuries.
- g. "To see that all injuries are reported and properly treated.
- h. "To instill a safety awareness in each employee through personal safety contacts and by group safety meetings.
- i. "To conduct regular safety appraisals of his section. This includes a careful check of all new and relocated equipment before it is placed in operation.
- j. "To give full support to all safety activities and safety procedures."

#### Company 5

"The line organization is pri-

—To page 56



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| <input type="checkbox"/> in underground cable manholes.      | <b>COOLING:</b>  | <input type="checkbox"/> stirring up stagnant air whenever men are working or material is drying. |
| <input type="checkbox"/> in aeroplane fuselages, wings, etc. | <input type="checkbox"/> motors, generators, switchboards. | <input type="checkbox"/> drying of walls, sheets, etc., after treated with coating material.      |
| <input type="checkbox"/> on coke ovens.                      | <input type="checkbox"/> wires and sheets.                 |   |
| <input type="checkbox"/> on steam-heated rubber processes.   | <input type="checkbox"/> general man cooling.              |   |
|  | <input type="checkbox"/> around cracking stills.           |   |

NAME .....

COMPANY .....

ADDRESS .....

CITY .....

(Write here any special ventilating problem you may have.)

# Home Study Safety Course For Industrial Supervisors

A HOME STUDY SAFETY course for industrial supervisors will soon be available through the National Safety Council's Industrial Training Division.

The course, "Supervising for

Safety," is already being tested by members of the Council's Industrial Conference. Seventy supervisors from these member firms are taking the course on a trial basis to point up unforeseen problems, such as

ambiguous examination questions.

"The home study course was devised because there was a definite need for it," according to Glenn Griffin, director of industrial training for the Council. "Many supervisors have not been getting safety training because their companies have too few supervisors to warrant a company course. Even some large firms don't have a course. This course will give every supervisor a chance to learn how he can promote accident prevention in his work."

The course comes in a kit with a textbook, *Supervisors' Safety Manual*, written by the Council's safety engineers, and 12 examinations, one for each chapter of the book. Students read a chapter, then answer a set of questions (true-false, multiple-choice, and essay type), and send the exam to the Council to be graded. Each man then gets his paper back with comments from his instructor.

An average score of 70 is considered passing. On satisfactory completion of the course, the supervisor receives a certificate and a wallet-size card. His employer is also notified of his "graduation."

According to present plans, the course should be ready for general use by the first of the year.

Subject matter of the course covers safety and the foreman, knowing your accident problem, the human element, maintaining interest in safety, instructing for safety, health and first aid, safe dress and personal protective equipment, departmental housekeeping, materials handling and storage, guarding machines and equipment, hand and portable power tools, and fire prevention and control.

All Industrial Conference members were invited to test-run the course. Some of the first to enroll students were: Westinghouse Electric Corp., E. I. duPont de Nemours & Co., Kimberly-Clark Corp., Moore McCormack Lines Inc., Industrial Accident Prevention Association of Quebec, Gulf Oil Corp., Chicago & North Western Railway, Lehigh Portland Cement Co., Liberty Mutual Insurance Co., Hercules Powder Co., Sinclair Pipe Line Co., Union Carbide Corp., Celanese Corporation of America and The Aetna Casualty & Surety Co.



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Circle Item No. 13—Reader Service Card



## Is your plant next?

If you've ever thought that this couldn't happen to your plant, a few facts may quickly change your mind. It can and *does* happen to 305 industrial plants every day! Staggering? — so are the losses, \$52,260,000 worth every year.

But your plant needn't be chalked up as just another statistic! You can do something about it!

First, let's consider the cause of such large loss fires. It's a known fact that one of the main reasons small fires become blazing infernos is — *the delay in reporting the discovery of a fire or immediate notification to the local fire department.* The chart below is a grim, factual reminder of

What happens when an alarm is delayed\*

Property	Minutes Delayed	Reason for Delay	Loss†
Cannery	1	Could not find alarm box	\$75,000
Woodworking plant	2	Discovered by passerby	\$101,000
Wire & cable plant	3	Employee tried to extinguish	\$395,000
Ore refinery	4	Employee tried to extinguish	\$250,000
Lumber yard	5	Employee tried to extinguish	\$150,000
Rubber plant	6	Fire destroyed telephone	\$100,000
Rubber warehouse	7	Telephone alarm, wrong address given	\$55,000
Metalworking plant	8	No alarm system	\$245,000

(Includes loss of buildings, material and equipment, but not loss of business records and other intangibles.)

## What you can do

Provide your plant with *complete* protection with a Gamewell FLEX-ALARM system that *identifies* the *zone location* of the fire, and one that can be *directly connected* with the *Municipal Fire Department*.

A FLEXALARM system can be pre-engineered to meet the precise needs of your plant. FLEXALARM is available as a coded or non-coded system, semi or completely automatic, with practically limitless possible combinations of annunciators, special drill, test and alarm features. For example, it can be tied into the

municipal alarm system at the curb; integrated with the sprinkler system; or automatic fire detection devices. It's simple to specify, easy to install, efficient and economical.

Specify Gamewell . . . for maximum protection at minimum cost. Write THE GAMEWELL COMPANY, 1295 Chestnut St., Newton Upper Falls 64, Massachusetts.

\*Facts on chart, itemized by The Gamewell Company, were taken from an article entitled "The Easiest Help Your Competitor Ever Got," in the May-June, 1959, issue of MODERN PLANT AND OPERATION MAINTENANCE. Reprints of this article may be obtained by filling out the coupon.

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FIRST...WHEN SECONDS COUNT

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- ☐ Have a Gamewell Fire Protection Engineer call.
- ☐ Send me a Gamewell Fire Alarm System Planning Guide.
- ☐ Send a reprint of article "The Easiest Help Your Competitor Ever Got."

Name.....  
Title.....  
Firm.....  
City.....Zone.....State.....

# COMING EVENTS



*in safety and  
related fields.*

## Nov. 4, Fort Worth, Tex.

Fifteenth Annual Industrial Institute. (Hotel Texas). L. W. Graff, Fort Worth Safety Council, Majestic Bldg.

## Nov. 4-5, Columbia, S. C.

1959 South Carolina Accident Prevention Conference. Fred Derrick, Jr., South Carolina Industrial Commission, P. O. Box 539, Columbia, S. C.

## Nov. 12-14, Dusseldorf, Germany

Industrial Safety and Factory Hygiene Congress and Exhibition. Nord-westdeutsche Ausstellungs-Gesellschaft MBH., Ehrenhof 4, Dusseldorf, Germany.

## Jan. 21-22, Milwaukee, Wis.

Eighteenth Annual Mid-Winter Occupational Safety Conference and Exposition. (Hotel Schroeder). R. W. Gillette, executive director, Wisconsin Council of Safety, Inc., 1 West Wilson St., Room 234, Madison, Wis.

## Jan. 25-28, Philadelphia, Pa.

Plant Maintenance & Engineering Show. (Convention Hall), Clapp & Poliak, 341 Madison Ave., New York.

## Feb. 16-17, San Francisco, Calif.

Tenth Annual California Statewide Meeting of Governor's Industrial Safety Conference. (Fairmont Hotel). Michael Flagg, coordinator, Governor's Industrial Safety Conference, c/o Dept. of Industrial Relations, 965 Mission St. (Room 400), San Francisco, Calif.

## Mar. 9-10, Philadelphia, Pa.

Twenty-sixth Annual Regional Safety and Fire Conference and Exhibit. (Bellevue-Stratford Hotel). Harry H. Verdier, executive director, Safety Council, Chamber of Commerce of Greater Philadelphia, 121 S. Broad St., Philadelphia 7, Pa.

## Mar. 15-16, Fort Wayne, Ind.

1960 Northeastern Indiana Safety

Conference and Exhibit. Ivan A. Martin, manager, Safety Council, Chamber of Commerce of Fort Wayne, Ind.

## Mar. 21-22, Boston Mass.

Thirty-ninth Annual Massachusetts Safety Conference and Exhibit. (Hotel Statler Hilton). Bert Harmon, manager, Massachusetts Safety Council, 54 Devonshire Street, Boston 9, Mass.

## Mar. 29-30, Oakland, Calif.

Eighth Annual Northern California Safety Congress and Exhibits (Hotel Claremont). Clinton W. Dreyer, Eastbay Chapter, NSC, 1322 Webster St., Oakland 12, Calif.

## April 5-7, Pittsburgh, Pa.

Thirty-fifth Annual Western Pennsylvania Safety Engineering Conference and Exhibit (Pittsburgh Hilton Hotel). Harry H. Brainerd, executive manager, Western Pennsylvania Safety Council, 305 First Federal Building, 600 Grant St., Pittsburgh 19, Pa.

## April 11-13, Los Angeles

Seventh Annual Western Safety Congress and Exhibits (Ambassador Hotel). Joseph M. Kaplan, manager, Greater Los Angeles Chapter—National Safety Council, 3388 W. 8th St., Los Angeles 5, Calif.

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down...wearing out ?**

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...and low cost ?**



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Safety surfacing compounds that break down or wear out lose their safety value and cause expensive maintenance problems. MSA Dura-Grip will wear for years and it keeps maintenance costs low because it stays down. For information, write Mine Safety Appliances Company, Pittsburgh 8, Pa.







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about improved products and new services  
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**For safer floors  
with beauty  
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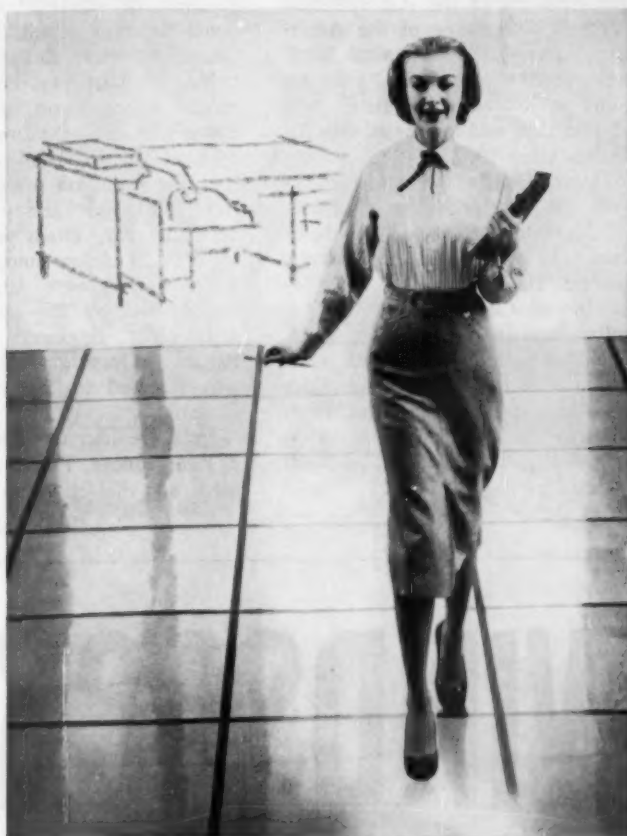
**Use quality floor waxes**

**containing Du Pont's**

**anti-slip Ingredient**

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You benefit two ways with floor wax containing "Ludox": First, there's the skid resistance "Ludox" adds. Tiny, transparent spheres of "Ludox" exert a snubbing action with every footstep . . . give sure-footed traction. Second, you get the lasting beauty wax can give your floors . . . and it's easy to keep floors beautiful, because scratches and scuffs can be buffed out, without rewaxing.

Be sure to have your maintenance man use a floor wax containing "Ludox", Du Pont's anti-slip ingre-

dient . . . give your floors the appearance you want, plus added safety underfoot. Fill out and mail coupon below for more information and names of products containing Du Pont "Ludox".

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Circle Item No. 16—Reader Service Card

## OBITUARIES

### F. S. MALLETTE

FREDERICK S. MALLETTE, executive secretary of the Air Pollution Controls Committee of the American Society of Mechanical Engineers, died September 10 at his home in Riverside, Conn. He was 53 years old and had been with the Society since 1952.

Internationally known for his work on air pollution problems, Mr. Mallette also served as editor of *Smog News*, ASME information bulletin. He arranged the First International Congress on Air Pollution, held in New York in 1955.

A New Yorker by birth, Mr. Mallette studied at the Universities of Michigan, Chicago, and Pittsburgh. He also held a fellowship at the Mellon Institute of Industrial Research.

From 1939-42 he was on the staff of the Industrial Hygiene Foundation at Mellon Institute. He was next associated with The Firestone Tire & Rubber Company, where he carried on important research in health hazards involved in manufacture of synthetic rubber. From 1944-46 he was industrial hygienist on the staff of the National Safety Council, leaving the Council to return to Firestone.

Mr. Mallette was consulted by several agencies on air pollution control. In 1957 the Interstate Sanitation Commission engaged him to study air pollution problems in the New York-New Jersey and Connecticut areas. Three years earlier, after the London smog to which 4,000 deaths were attributed, he was invited by the Institution of Mechanical Engineers of Great Britain to lecture in London. He also lectured in Manchester and Glasgow.

In 1948, after the smog catastrophe in Donora, Pa., the American Steel and Wire Division of U.S.

Steel engaged him as assistant director of research in charge of air and stream pollution control efforts.

### THOMAS M. LIVELY

THOMAS M. LIVELY, former member of the executive committee of the Council's Construction Section and a partner in Lively-Blair and Associates, Minneapolis, Minn., died in a plane crash September 18 near Lakeville, Minn. He was 45 years old.

As a consulting safety engineer, he was an authority on supervisory training, safety and incentive programs, and often lectured and led conferences in the construction industry.

Mr. Lively was a member of the Northwest Chapter of the American Society of Safety Engineers, and The Associated General Contractors of both Minnesota and Missouri. He is survived by his widow, a resident of Edina, Minn.

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yet costs only 25¢



We took the good old snug, warm stocking cap and re-designed it to fit comfortably under a hard hat. The

result is the StaSafe Windsock. There's nothing complicated about wearing a Windsock... no pushing, no snapping and unsnapping, no bothersome and time wasting installation. Best of all there's no size problem. Every Windsock fits every man because the stockingette weave easily expands to any head size.

Windsocks are easy to order, too. No variations in helmets to keep in mind. No variations in fabrics or sizes.

Just specify Windsocks and they'll fit!

One dozen only \$3.00 plus postage.

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## ***EVEN PROGRESS BRINGS ITS HAZARDS***

Civilization today runs on wheels. Yet this greatest of man's inventions came from the mind of prehistoric man an estimated 5,000 years ago. His original wheel furnished the basis for practically all machines and rotating parts in our highly accelerated industrial plants today. Perversely enough, this great boon to the advancement of modern civilization has also become man's greatest hazard to life and limb.

In today's advancement of American Industry, new foot hazards to the worker spring up at every turn. To meet this challenge the selection of safety shoes for every job hazard is one of the modern safety engineer's most important responsibilities.

Safety Box Toe Company's responsibility is

to develop and produce *austempered* steel toes of the finest quality and design that modern science can create. 19 distinct styles of steel safety toes are now available to fill every shoemaking requirement . . . WINGUARDS, of course, are *still* the most popular.

Write today for your illustrated copy of  
A PROGRESS REPORT OF INDUSTRIAL FOOT PROTECTION

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# THE ACCIDENT BAROMETER



Prepared by the Statistics Division,  
National Safety Council

ACCIDENTAL deaths in July numbered about 8,400 or 300 more than occurred in July 1958. Aside from no change in work accident fatalities, all classes showed increases over last year.

During the first seven months of 1959, accidental deaths numbered 52,400, or 2 per cent above last year. There were more deaths from motor-vehicle and public non-motor-vehicle accidents, fewer deaths from home, and about the same number from work.

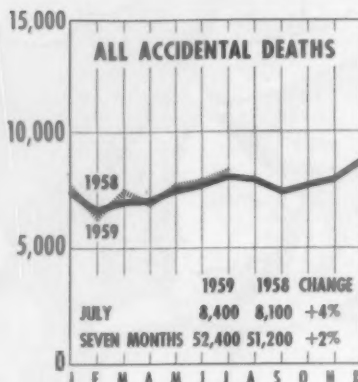
## Motor-Vehicle Deaths

The July total of motor-vehicle deaths was 3,340, an increase of 4 per cent over last year.

Deaths for seven months numbered about 20,430, or 5 per cent above 1958. The seven-month death rate per 100,000,000 vehicle miles was 5.1, no change from 1958.

Of the 48 states reporting for seven months, 15 had fewer deaths than last year (including Alaska) and 33 had more deaths. States with the greatest improvement for the first seven months of 1959 were: Louisiana, —23 per cent; Maine, —15 per cent; Minnesota, South Dakota and Alaska, each down 14 per cent.

Reporting cities with populations of more than 10,000 had an increase of 4 per cent for July and 1 per cent for the seven-month period. Cities



with more than 200,000 population having the largest reduction in deaths for the first seven months of the year were: Rochester, N. Y., —69 per cent; Norfolk, Va., —50 per cent; Toledo, Ohio, —40 per cent.

## Work Accidents

Deaths from work accidents totalled 1,200—no change from 1958. The seven-month death total was 7,700, also no change from last year.

The July frequency rate per 1,000,000 man-hours in 16 sectional accident prevention contests conducted by the National Safety Council was 5.75, 7 per cent above last year. The seven-month rate was 5.24, up 5 per cent.

The U. S. Bureau of Labor Sta-

tistics reported the injury frequency rate for manufacturing continued its upward trend in the second quarter of 1959 with a 6 per cent increase over the first quarter rate and a 10 per cent increase over the rate for the second quarter last year. Each month in 1959, the rate has been above the rate for the corresponding month of 1958.

## Public Deaths

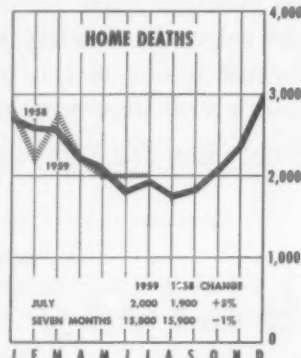
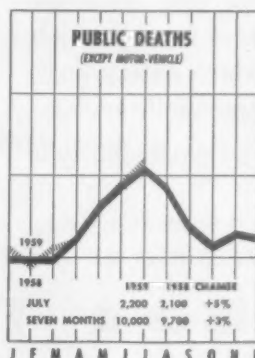
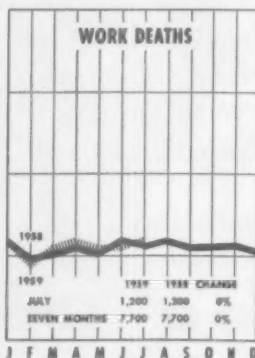
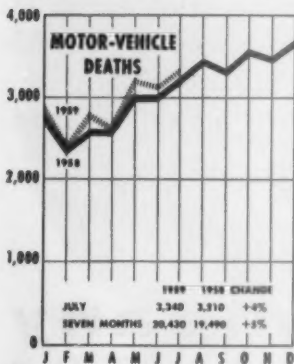
Public non-motor-vehicle accidents in July resulted in 2,200 deaths, or 100 more than last year.

The January-July death total was about 10,000, an increase of 3 per cent over 1958. There were more deaths from burns and falls, fewer from transportation accidents and about the same number from drownings and firearms accidents. Decreases occurred among young people 15 to 24 and persons 25 to 44 years old. Other age groups showed increases, with the largest change recorded for children under 5 years of age.

## Home Deaths

Deaths from home accidents numbered about 2,000, an increase of 5 per cent over July 1958.

The seven-month total (15,800) was a reduction of 1 per cent from last year. Decreases in deaths from poison gases, falls, and other home accidents were nearly offset by increases in deaths from poisonings, burns, mechanical suffocation, and firearms accidents. Most of the decrease occurred among persons 65 years and over, but deaths of persons 45 to 64 years old also were fewer. Deaths in the other age groups were up, with the largest increase among young people 15 to 24 years of age.





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Circle Item No. 18—Reader Service Card

# PERSONALS

News of people in safety and related activities

## Zeskey Promoted

CHARLES R. ZESKEY, JR., associated with National Safety Council activities for the past 23 years, has

been named vice-president for underwriting and engineering of Consolidated Underwriters, Kansas City, Mo.

Mr. Zeskey was graduated from the University of Kansas in 1934 with a B.A. degree in Business Administration, and in 1937 earned a B.S. degree in Industrial Engineering. He joined Consolidated Underwriters in 1937 as assistant chief engineer and became manager of the Engineering Department in 1940. During World War II he

served in the Pacific Theater and has remained active in the Army Reserve as a major in the Corps of Engineers.

Mr. Zeskey is a registered professional engineer, a member of the American Society of Mechanical Engineers and the American Society of Safety Engineers. He is general chairman of the Kansas City Chapter of American Society of Safety Engineers, past general chairman of the Wood Products Section of the National Safety Council and the Southern Safety Congress. He is a member-at-large of the Industrial Conference and has served as chairman of the Member Opinion Survey Committee. He is a member of the American Society of Safety Engineers Nominating Committee and the Committee on Cooperation with Engineering Colleges.

Many of Mr. Zeskey's articles originally appearing in NATIONAL SAFETY NEWS have been reprinted in other publications. He has spoken to safety and engineering groups throughout the country and is the author of numerous Data Sheets and Safety Instruction Cards.

## ONLY 9½" HIGH— Washington's LOWEST ELEVATING AMBULANCE COT!



**MODEL NO. 54-L  
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Here's the perfect answer to cars that have less headroom, and for over-head hanging stretchers. Although this cot folds to only 9½" high, it elevates to 34" hospital-bed height, instantly and safely! Famous Washington quality and craftsmanship make it today's finest cot. Reasonably priced at \$143.50.



Excellent for roadside pickups, removals and various types of patient transfers—a handy extra cot in a hurry! Legs and wheels unfold easily and snap into position, ready for instant use. Weighs only 14 lbs. Price \$44.50.

**MODEL NO. 11  
LIGHTWEIGHT  
EMERGENCY  
STRETCHER**



Brings patients down stairs, through hallways and close quarters comfortably, where cots and stretchers cannot be used. Wheels make it easy to maneuver. Folds compactly, stows easily until needed. Complete with pad and two body straps. Price \$47.50.



**MODEL NO. 40  
WHEEL MODEL  
STAIR CHAIR**



See your jobber  
or write for  
**FREE catalog!**



## Washington Products Co.

WASHINGTON COURT HOUSE, OHIO

## "Co-Pilots," Not Back-Seat Drivers

"Women today should be 'co-pilots,'" because "the day of the back-seat driver is past," Mrs. Marvin Craig, Onarga, Ill., safety chairman of the Illinois Federation of Women's Clubs, said recently at the University of Illinois.

Speaking at the Illinois Traffic Court Conference, she outlined a five-point program through which club women can help build citizen support for traffic courts.

She told 100 police magistrates and justices of the peace attending the conference that club women can help promote traffic safety by supporting courts. They can develop proper attitudes toward law and enforcement in themselves and in their families from "trike to bike."

They can inform themselves about problems of the courts, can evaluate local court facilities and procedures, can vote for honest and sincere justices, and can press for court improvement legislation.



# New "Safety Twins"!

## low-cost 2½ lb. pressurized Dry Chemical extinguishers

... now charged with patented "formula H"!

If you're looking for a low cost, high quality, multi-purpose extinguisher . . . one that's both compact and effective—then *this is your baby!* Available in either sparkling Chrome Plate or lustrous Vermillion Red, this new, budget-priced 2½ lb. dry chemical extinguisher packs high fire-killing power against flammable liquid, gas and electrical hazards. To further boost speed, dependability and effectiveness, the "Safety Twins" are charged with patented "Formula H," an exclusive moisture-repellent, heat-resistant, non-caking powder that flows freely under all conditions!

Because extinguisher is lightweight and easy to operate, it can be used effectively by women as well as male employees in factories, office buildings, schools and institutions, and by all household members around the home, car, garage, boat, etc. Operation is fast, simple, effective. Squeezing the "grip fit" handle releases a 60° wide angle blanket of powder in a flat dense pattern. The dry chemical reaches 10 to 12 feet to quickly smother incipient fires. Pressure gauge shows operating condition at a glance. Model is fully approved by Factory Mutual, U. S. Coast Guard, and Underwriters' Laboratories and carries new high 4-B, C rating by U. L.

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## Management Safety Policies

—From page 44

marily responsible for the safety of its operations. Its responsibility covers employees, equipment, materials, and methods.

"While it is agreed that most accidents can be prevented by operators working safely, the persons who are in a position to make certain that the operators work safely are their immediate supervisors. For these reasons the company holds departmental supervision responsible for carrying out the details of the general company policy by providing adequate safeguards against fire and accident hazards, with proper equipment, materials, methods, and trained and instructed employees in their respective departments.

"The direct supervisor should:

- a. "See that equipment (machinery, tools, structures, and devices), materials, and work conditions are satisfactory from the fire and safety standpoint. This includes calling new or modified equipment to the attention of the safety

department through the safety leader before starting it.

- b. "Make certain that employees perform in accordance with standard practices. This involves proper selection, placement, training, and necessary regular follow-up. It also includes the development of the employee's cooperation and interest in safety and fire prevention.
- c. "Make certain that all safety factors are considered in the establishment of wage incentive applications, and consult with industrial engineering personnel and departmental safety leaders in determining the considerations for safety in all job standards.
- d. "Work in cooperation with the departmental safety leader in determining safe practices, their observance, violations, and general safety and fire prevention.
- e. "Make certain that the fire department is called in the event of a fire.
- f. "Make certain that all injured persons (regardless of how minor the injury) are referred to the

medical department for treatment or clearance and that accidents and injuries are reported promptly and properly.

- g. "Make certain that procedures established for emergencies are understood and promptly carried out in event of an emergency.
- h. "Seek the assistance of the safety, fire, or other service department through the departmental safety leader on matters that require professional attention."

### Company 6

"The fullest measure of effective safety work in any plant can be accomplished only when the supervisory force cooperates wholeheartedly in the safety program. To win the respect of their men, foremen must know each detail of the job in order to recognize dangerous situations. They must constantly sell to their men the wisdom of using personal protective devices and methods and see to it that they are used and observed properly. Following is a list of the foremen's most important safety obligations.

—To page 60

# STOP MIS-GUIDED MISSILES



## with MOTT Hammer-Knife Mowers!

Here is the safest...the most versatile mower available today! The free-swinging blades of the patented MOTT Hammer-Knife mower fold back upon contact with obstructions... return to cutting position when clear... thus eliminating the danger of flying sticks, stones and other debris. Nothing—not even the clippings, are thrown from the mower.

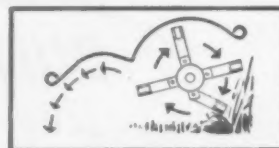
The best of both rotary and reel are combined to provide an even cut regardless of roughness of terrain or condition of the grass... even when wet! The cutting action of the knives cut and re-cut the clippings into a fine mulch and deposit them evenly behind the mower.

Smooth even lawns...or tall man-sized weeds—ALL are cut and shredded in just one pass! AND there are 32 models to choose from—18" to 19 ft. gangs. Leaf mulching attachments for all mowers. Ideal for industrial tracts, estates, parks and schools.

One demonstration will convince you! Write for complete literature and the name of your nearest MOTT dealer



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**PROTECTION PLUS\***  
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Wire mesh side shield has fine screen to stop particles and give ample air flow.



Insulated wire mesh side shield with heat-resistant covering. Non-corroding.

## NEW M-70 Metal Frame Safety Glasses



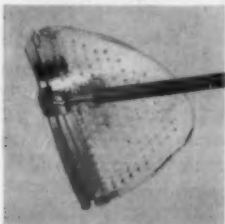
M-70 The basic B&L metal frame safety glass.



P-71 The M-70 with wire mesh side shields.



Side shield of solid acetate stops passage of liquids and dust. In clear or green.



Perforated acetate side shield provides protection plus comfort. In clear or green.

### Job-Tailored!

Fitting the protection to the hazard is half the battle. Now you do it easily and swiftly in your own department with a single basic front and a selection of side shields. M-70 combines the sturdiest metal construction with distinctive styling and new Bal-SAFE S-7 lens shape. Another striking example of the economy of Bausch & Lomb quality. Write for Catalog Folder A-1800: Bausch & Lomb Optical Co., 90347 Smith Street, Rochester 2, New York.



Ingenious expansion end piece does the trick . . . allows easy assembly and disassembly of side shields without changing fronts or temples.



**\*Protection PLUS Safety Products**  
protection + economy + worker acceptance



# What About Bert?

—From page 12

We had a good talk, and finally Bert made a suggestion: "Maybe we could reach these guys with some kidding. Honest, they're a pretty good bunch of fellas, but they're young. And if you're young today, you gotta feel like a tough guy, a big guy. You gotta have the fastest motorcycle or pack the biggest punch or something to make the gang look up to you."

"These guys making trouble haven't got any other way to look big, so they pick on guys they think won't make 'em look bad by fighting back. My idea is: make horse-play look like dumb kid stuff. You can't scare 'em off it, but maybe we can laugh 'em off it. Gee, those guys hate to look bad."

So we cooked up a conspiracy. Bert got together two or three other level-headed boys from the shop, and between us we worked out a campaign of ridicule to make every practical joker look silly. It took some doing, and it took some time. But soon Bert's group had the support of most of the older men and several of the youngsters.

Their tactics were unsubtle and corny, but they worked. For example, for a whole week, whenever a practical joke was pulled, the perpetrator would soon after find a not-very-clean baby's diaper stuck into the back pocket of his overalls, hanging down for all to see and laugh at.

So Bert got married, and his girl got him taking a night math course at the local high school. Six months ago he was made a sub-foreman.

He's been on my side all the way. He's come to me for suggestions on how to prevent accidents in his section. He's borrowed my *Industrial Safety Manual*, and he's come to me with questions on things he doesn't understand.

But he remains popular with his fellow employees. He hasn't been branded with the "eager-beaver" label, despite his promotion. "A square shooter," the boys in his section say. "A hot-tempered guy who's crazy for production and a fanatic on safety, but still a level guy."

Having a man like that on the

shop floor is a major asset to the safety program. But right now I've got another problem. One of my two assistants has accepted a better job, and I've got a vacancy on my staff to fill the first of January.

For several years, every man I've hired as an assistant has been a college-trained engineer. It has paid off, for these men had to have technical education on which to build the practical applications.

But I'm strongly tempted to hire Bert, with his high-school diploma, his night-school math course, his untechnical Army experience. I'm tempted, because he has demonstrated a superior ability to think out and deal with a difficult set of human problems. What he did to end horseplay at Lenners is something I couldn't have done, and something my engineer-assistants couldn't have done.

He's also a man of superior intelligence, and I think he can learn enough of the technical material to grow in the job.

I hate to lose a good, safety-minded foreman, even by hiring him as a safety man. That's a definite loss, and it's one argument against hiring Bert.

But I have to weigh the advantage of demonstrating, by hiring him, that safety enthusiasm in a young foreman can pay off. Probably I'll never hire another man like Bert off the Project. But the Project's bright young men probably won't be thinking the thing through analytically. It may be a real gain simply to say *in action* that safety pays.

Finally, I have to think through the situation from Bert's point of view. Oh, he'd come, I'm sure. We could pay him enough more than he gets now to ensure that, even if he didn't have a young wife pressing him to better himself.

But what about five years from now? Safety engineering is going the road of almost all professions, raising its standards of education, depending more and more on the evidence of a degree to rate a man. Would I be encouraging him to enter a blind alley?

I don't know—not for sure, not for certain. But I'm going to have to weigh these pros and cons and make a decision by January 1.

\* \* \*

**AUTHOR'S NOTE:** Once before, I threw an unsolved problem into my readers' lap. And you good people wrote, in the form of answers, one of the most useful installments of the *Diary*. So, with your help, I'd like to try it again. Please write me, care of the National Safety Council, telling the safety engineer whether or not to hire Bert Harding, with some reasons, briefly stated. If you cooperate, a selection of those answers will appear in the January NATIONAL SAFETY NEWS.

## Better Than a Notebook



Safety engineers for casualty insurance companies have found a new aid in their field work—a portable battery-operated dictating machine. It enables engineers to gather on the spot reports on conditions in plants, on construction sites and other locations.

The "Traveler," manufactured by the Soundsciber Corporation, North Haven, Conn., permits engineers to dictate at their convenience—on location, in automobiles or trains, or at home. The green plastic recording discs are mailed to their offices in standard-sized envelopes for transcribing.

Two choker hitch legs  
are joined on a sturdy  
crane-hook link.



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or sets. Easy to handle —  
extremely flexible.

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**ATLAS  
CH-2  
SLING\***

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one left lay — are uniformly  
braided into an 8-part  
round body. Each rope  
shares the load.

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thimble on lower  
end permits  
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ATLAS SLING is a trade name of Macwhyte Wire Rope Company.

Macwhyte Atlas braided slings are readily available in a variety of standard types and assemblies. If you have a special load-handling requirement, we will make Atlas Slings to your design

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### MACWHYTE WIRE ROPE COMPANY

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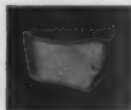
Manufacturers of wire rope, slings, and cable assemblies. Distributed and stocked throughout United States.

# BUY the BEST

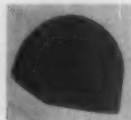
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"QUALITY LINER"  
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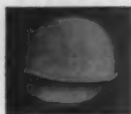
Warmth, durability, comfort and convenience are built into Fibre-Metal's completely new quality line of winter liners...for greater worker safety and "work ability." Designed for all safety hats and caps in the field, these winter liners are made of high quality, water-repellent, mercerized and sanforized fabrics...expertly tailored for maximum service life. Ask your welding and safety supply distributor NOW for our more descriptive bulletin or just order by model number and size.



**Model MF** Mouthpiece for Models FLF, FLF-I and FLF-Z for use where face protection against cold and wind are necessary. Snap on! Same high quality fabrics.



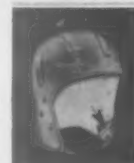
**Model FLK** (Universal size). 100% Navy Blue wool. Fits all heads. May be used separately or with other winter liners for greatest warmth and comfort.



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—From page 56

"He will:

- a. "Familiarize himself with the company policy and safety program and with his responsibilities in that connection.
  - b. "Give safety training to employees.
  - c. "Assist in developing departmental job safety practices.
  - d. "Instruct new employees and review the departmental safety procedures with them.
  - e. "Assign assistants or key operators to train new employees (or transferrees) in safe methods to be followed on the job.
  - f. "See that safety bulletin boards are kept in good order.
  - g. "Hold departmental or supervisory meetings to discuss safety topics of current importance.
  - h. "Investigate all accidents promptly in order to discover their true cause and provide for proper corrective action.
  - i. "Complete reports on all accidents resulting in injuries serious enough to cause lost time or [require the] attention of a doctor, [or resulting in] serious production curtailment or equipment damage, or [having] a cause the elimination of which is of interest to other departments.
  - j. "Carry out all safety recommendations promptly. Refer to management all of those involving charges beyond his authority.
  - k. "Attend plant safety meetings regularly and on time, and participate in the discussions.
  - l. "Make plant safety inspections when appointed to that capacity.
  - m. "Maintain safe working conditions in his department by making constant departmental surveys to detect unsafe work habits or practices.
  - n. "Study new jobs to detect and eliminate hazards.
  - o. "Authorize jobs to begin only when guards are in place and operators fully instructed.
  - p. "Authorize construction of machine guards and insist on their use.
  - q. "Provide safety clothing and all other protective devices, as needed.
  - r. "Insist on employees securing first aid [for] and reporting all injuries. . .
- "The foreman or supervisor is



responsible for the thorough investigation of accidents occurring in his department so that the true accident causes can be discovered and proper countermeasures can be taken."

#### Company 7

"It shall be the duty of every supervisor to carry on the operations under his jurisdiction in such a manner as to afford maximum protection for all employees. He shall be considered responsible for the correction of unsafe conditions and the continued maintenance of good housekeeping practices. . . .

"It will be considered a requirement of good supervision to see that the individual employee receives all necessary instructions and such training as may be required to perform his job in the safest manner possible. In addition, the supervisor will be responsible [for seeing] that the job instructions and safe work practices on the job are fully complied with by the employee."

#### Company 8

"Each supervisor will take the initiative in the establishment and maintenance of safe and healthful practices and work places for every employee under his supervision, and in assuring that the manner of performance of all operations will minimize personal injury and disease and damage to equipment, materials, and property. Safety is an integral part of each job, and each employee is responsible for the safety phase of his work just as much as he is for any other phase."

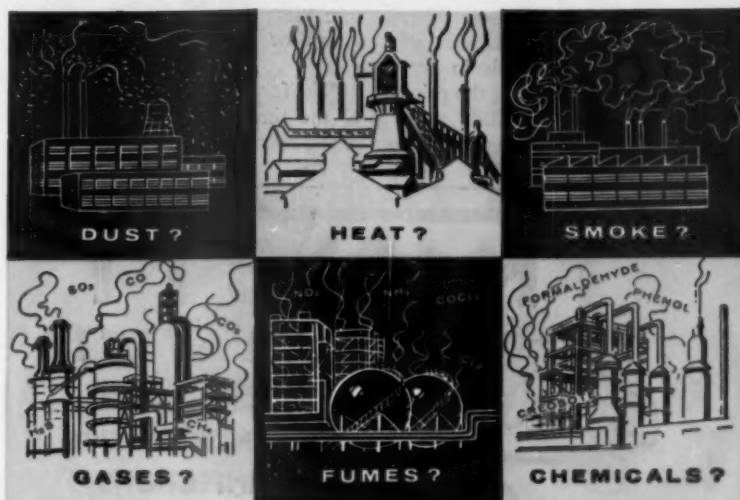
#### Company 9

"It will be the responsibility of each local management to inform all levels of supervision that accident prevention is an essential part of their jobs and that safety will not be sacrificed in the interest of either quality or service. It will be the further responsibility of each local management to take a personal and active interest in all safety work and to discuss such matters with subordinate personnel in the same manner as matters having to do with production."

#### Company 10

"Accident prevention, being largely a matter of proper supervision, depends primarily for its success upon the ability of supervisors to

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enforce the observance of safe-practice rules.

"As a direct result of management direction in accident-prevention work, supervisors are encouraged to provide facts, take corrective action, and instill and maintain enthusiasm [for] safety. . . .

"A keen, alert supervisor, foreman, or crew chief, conscious of responsibilities and capable in performance, understands that the principles of supervision include accident-prevention and safety work. He

has a splendid opportunity to observe and correct unsafe practices and conditions long before they result in accidents. This opportunity exists because the person hurt or involved in an accident of any kind has been exposed, in the average case, several hundreds of times before the penalty in the form of an injury or of property damage is paid.

"The foreman may not be on hand at the time an accident or an injury occurs, but he is ordinarily in

such close contact with his workers that he has many opportunities to observe the unsafe practice or unsafe conditions which precede the accident or injury. On many other occasions, if he exerts proper supervisory influence, the employees who work under him will carry on their duties just as safely when he is absent as when he is present.

"The supervisor, foreman, and crew chief shall be constantly on the lookout for violations of safe practice and unsafe physical conditions. [When they observe violations, they] should take such immediate corrective action as is within [their] authority.

"They shall instruct new employees in safe practices and procedures and as to their responsibility in case of fire or other catastrophe."

#### Company 11

"Safety and accident prevention are prime responsibilities of operating management. All supervisory employees *must* accept responsibility for the prevention of accidents on work under their jurisdiction. Staff safety supervisors, engineers, and inspectors serve only in an advisory capacity.

"When making job assignments or issuing work orders, all supervisory personnel shall be responsible for thorough training and instruction of employees under their direction in all correct measures necessary to ensure safe operations."

#### Company 12

"Direct supervision will bear direct responsibility for safety. Supervisors as vital links in fulfilling the company's policy requiring alertness in preserving plant and personnel will see that hazardous conditions and practices are detected and corrected or reported for correction and that precautions are taken to safeguard property and materials."

#### Company 13

"Line supervision [is] responsible for:

a. "The safety of employees to the same extent that it is responsible for productive output of these employees.

b. "The installation of safe equip-

—To page 64

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AND OTHER  
ANNOYING SKIN  
INFECTIONS  
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Recognized throughout industry as a superior, heavy duty paste-cream antiseptic skin cleanser, VI-LAN fortified with Lan Act 12, is properly dispensed with portable and stationary dispensers conveniently placed on work benches, service trucks, oil rigs, laboratories, store rooms, work carts, lavatories, and in EVERY WASH ROOM. used WITH OR WITHOUT WATER, Vi-Lan removes greases, oils, paints, tars, acids, asphalt, pipe dope, rubber, etc., inhibits dermatitis and serves to eliminate lost man hours and expensive compensation claims. It drastically reduces hand-cleaning costs, and removes stubborn soils in less time than conventional soaps and detergents. IT DOES WHAT SOAP CAN NOT DO, and its lanolin content preserves natural skin qualities.

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Testing a Rockwood FogFOAM System that guards the oil separator pits in Cincinnati Gas & Electric Co.'s plant.

## Here's high protection against low flash-point fires!

In any group of oil separator pits, the pit with the lowest flash point sets the danger mark for the entire area.

To installations of this type — and to many others endangered by fire — Rockwood FOAM and FogFOAM systems bring the surest, most dependable fire protection ever developed.

In the FogFOAM system shown above, protection starts with the heat detectors located around the pits. During any critical temperature rise these detectors sense the inception of fire. The signal is transmitted automatically —

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Rockwood FOAM liquid, mixed with water and air, is then released through many FogFOAM heads over each pit. Within a few seconds a thick blanket of Rockwood FOAM completely covers the threatened area... A disastrous fire has been prevented.

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**Double Strength FOAM Liquid Gives Double Protection.** Three parts of Rockwood Double Strength FOAM liquid mixed with 97 parts of water and 900 parts of air form a fire-smothering blanket that quickly reseals itself. You pay for only three parts per thousand for this extinguishing agent that has proved its ability to put out spill fires in flammable liquids, with maximum speed and safety for personnel. Tested and listed by Underwriters' Laboratories, Inc. Branch Offices in all principal cities.

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ment and facilities and work methods.

- c. "Adequate inspection and prompt maintenance of equipment and facilities.
- d. "Detection and prompt correction of unsafe conditions and unsafe practices.
- e. "Vigorous and continuous training in accident prevention and on-the-job safety.
- f. "Enforcement of established rules and work methods and disciplinary action necessary to assure compliance.
- g. "Prompt accident investigation, prompt reporting, and prompt carrying out of corrective measures.
- h. "Making full use of the safety organization.
- i. "Setting the proper safety example. . . .  
"Line supervision [should]:
  - a. "Instill the proper safety attitude in all employees through on-the-job safety training and by initiating and conducting vigorous and active safety meetings.
  - b. "Utilize the services of the inspection organization.
  - c. "Promptly investigate and report

all accidents which may or may not have caused injury and effect necessary corrective measures.

- d. "Take necessary action to eliminate hazards and unsafe practices and see that interested persons are advised.
- e. "Initiate commendations for safe performances or suggestions by subordinates.
- f. "Initiate disciplinary action for infraction of safety rules or safe working procedures.
- g. "Formulate and keep up-to-date safety rules for the area.

### Policy for Safety Department Responsibility

#### Company 1

"The safety department is responsible for guiding management in the formulation of sound policy designed to meet stated objectives. It is accountable for stimulating: acceptance of sound safety practices, development of an attitude of safety-mindedness, and active participation by operating management in reaching these objectives. Further, it is accountable for providing technical know-how in establishment of

safety procedures, instructions, rules, and standards in major divisions of the company. . . ."

Other duties of the safety department are to:

- a. "Collect, analyze, and disseminate data on accident and fire experience for the purpose of corrective action and to further the study and understanding of various safety problems.
- b. "Advise and counsel management in the selection of safety personnel and the adequate administration of safety activities.
- c. "Consult with management at operating locations on experience and application of safety procedures and practices."

#### Company 2

"Safety engineers will provide staff supervision and advisory services on all functions and activities, but the safety program will be applied in such manner as to provide for maximum utilization of accident prevention controls by engineering, operational, and administrative procedures within the regular framework of organization, functions, and

*For SAFER wire rope fastenings . . .*

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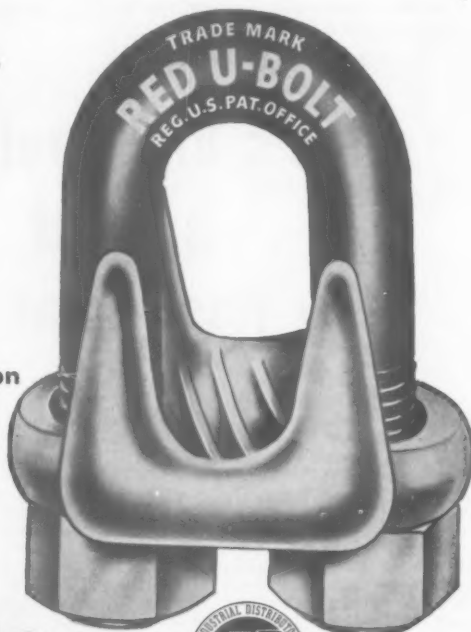
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—just apply **UREABOR®** and you can forget about weeds for the season!



Think of the savings—in time *and* money—this weed killer offers you! UREABOR is the special granular weed killer meeting all requirements of industrial users. A little does a lot! One DRY application of only 1 to 2-lbs. per 100 sq. ft. creates weed-free areas anywhere for a whole year! UREABOR is safe, effective, economical and convenient. It's always ready for use direct from the bag—in the easiest possible way—to destroy weeds and protect your property from grass fires.

A SPECIAL SPREADER simplifies and speeds UREABOR applications at low rates with accuracy. Spreader holds enough UREABOR to treat 1250 sq. ft. without refilling; weighs a mere 6 lbs. Width of the swath can be adjusted.

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STANDARD PACKAGE IS 50 LBS. UREABOR is packed in multiwall paper sacks for easy handling—easy storing. A convenient package, easily disposable, for spotting at predetermined intervals to facilitate large-area applications.

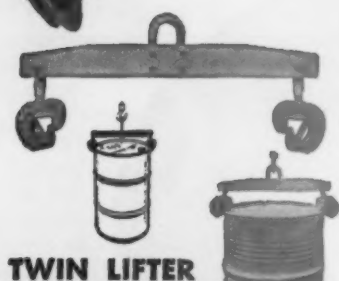
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duties, rather than by establishing such controls as a separate entity. Integration of accident prevention measures in all activities and operational procedures is the basic concept of the safety program."

#### Company 3

"The safety engineer performs a safety service function with responsibility for helping operating managers and first-line supervisors fulfill their responsibility for safety. Principal duties of the safety engineer include:

- "Pinpointing unsafe working conditions and unsafe practices and making sound recommendations for correction.
- "Maintaining a continuing educational and safety promotional program for supervisors and employees.
- "Establishing an effective system for measuring supervisor safety performance and maintaining an adequate system for reporting accident and injury statistics."

#### Company 4

"The fire prevention and safety department is responsible for staff assistance to line and service departments in fire protection, fire prevention, accident prevention, and in the control of emergencies affecting the safety of persons or [causing] serious damage to buildings, equipment, and product.

"Some specific duties of the department are outlined below.

- "To keep in touch with new developments in the field of accident and fire prevention and, if necessary, to carry on or cooperate in research on problems in that field.
- "To prepare or review and approve, when satisfactory from a safety standpoint, all safe practice standards applying either to the plant as a whole or to specific departments.
- "To review new or modified methods, materials, supplies, and equipment, including buildings, machines, tools, and devices. This shall include the review and approval of building plans, plans of new machines and equipment that involve fire and safety hazards.
- "To develop a centralized program and to assist in departmental programs to develop and

maintain interest in accident and fire prevention.

- "To interpret laws, directives, and codes dealing with accident prevention and fire protection.
- "To investigate and report on safety suggestions or delegate such investigation to safety leaders . . .
- "[To] accompany state inspectors and insurance inspectors on all inspection trips within the department."

#### Company 5

"The duties of the [safety] director are as follows:

- "Devise corrective measures to prevent accidents and determine that such measures are effected.
- "Make personal inspections as may be necessary of stations and installations.
- "Investigate fatal and unusually serious accidents, as well as significant first-aid cases.
- "Maintain necessary records with regard to accidents, inspections, recommendations, and other accident prevention activities.
- "Check or have checked specifications for new structures, new machines, processes, and equipment for compliance with existing codes, laws, and safety requirements.
- "Act as secretary of the central safety committee.
- "Keep management informed of the over-all accident trend.
- "Issue monthly safety bulletins to all installations. Bulletins [are] to include information on unusual accidents which have occurred and the required action for preventing the recurrence of similar accidents, [and] safety educational material and data in connection with the accident experience. Literature regarding health control methods, safe driving, and hazards within the home shall also be sent to the stations periodically."

#### Company 6

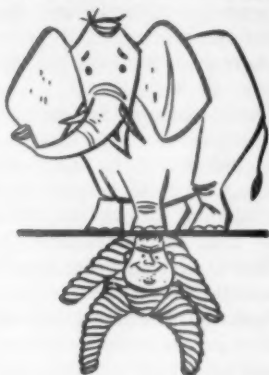
"The safety organization [is to]:

- "Provide adequate safety and fire prevention equipment.
- "Make recommendations to management on the accident prevention program and safety conditions in the plant.
- "Keep abreast of new safety developments.

# Tuffy Tips

—on safe use of  
Slings and Hoist Lines

## How Much Lifting Should be Done by Muscles?



Individual differences between workers make this a hard question to answer categorically. For a rule of thumb: the United States Department of Labor recommends men should handle no more than 50 pounds; women no more than 25 pounds. Of course, this is for men and women of average size and weight, in normally good physical condition. To remove all doubt, mechanical lifting and hoisting equipment should be used for all loads not comfortably lifted by muscles.

## Rules to Remember For Wire Rope Safety

1. **BREAK IN** new wire rope with care. Don't use it at maximum load capacity until it is broken in beyond a doubt.
2. **OBSERVE SAFETY FACTORS.** Usually the rated load factor is 4 to 5. The Wire Rope Technical Board says 5. Elevators require 10. Static ropes—not hoisting, dragging or actively operating—may have a rated load factor of 3.
3. **LUBRICATION IS IMPORTANT** for safety, as well as for pliability and friction-fighting. Rust makes ropes brittle, and likely to break without warning. Thorough lubrication keeps out rust.
4. **INSPECT ROPES** and slings frequently for signs of serious wear. Careful inspection may save costly work stoppage or serious injury.

## Sling Fittings Are Important Safety Aids

Proper fittings serve the dual purpose of greater safety and longer sling life. Fittings used on Tuffy Slings are made in more than a score of types, for every kind of service. Two of them are shown here:

(1) **EYE HOOKS:** Fittings for Tuffy Slings are selected on the basis of providing the complete unit assembly with equal breaking strength overall. Eye hooks are forged steel, weldless and designed for efficiency.



(2) **NEWCO SAFETY HOOK:** People can forget to lock a hook gate. This safety hook always remembers. A load cannot be lifted without the gate (yoke) automatically locking. To be opened, it must be manually pressed against a compression spring. We also supply this safety hook with a swivel eye for the sling. The name: Newco Safety Swivel Hook.



## Tuffy Hoist Line: Stalwart Companion of Tuffy Slings

Tuffy Slings and Hoist Lines work as an efficient team on all types of overhead cranes, derricks and clamshells. Like all Tuffy Special Purpose Wire Ropes, Tuffy Hoist Line has the



right combination of strength, flexibility and toughness for greatest safety and longest service life. Use this Tuffy "team" to cut hoisting costs in every type of materials handling.

Your Tuffy Distributor Offers the Most in Service and Savings

**UNION**  **Wire Rope**

S1



Subsidiary of **ARMCO STEEL CORPORATION**

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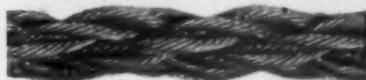
Circle Item No. 31—Reader Service Card

National Safety News, November, 1959



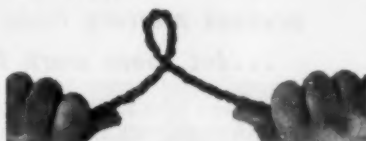
## An Eye for Strength and Safety

Slipped over the tuck-splice of the sling eye, and pressed on under tremendous hydraulic pressure, the steel ferrule holds so tight that it gives the eye splice full strength of the fabric. What's more, it is smoothly tapered to meet the main body of the sling. No abrupt edges or rough projections to injure hands and slow down work. The extra life, efficiency and safety of Tuffy's pressed-on ferrule is yours at no extra cost.



## Tuffy Leads with Two Lives

"Tuffy Slings give us double the service life of ordinary slings." So reported one of the big steel corporations. The secret of Tuffy's extra life: the patented 9-part machine-braided fabric. It provides a combination of flexibility and strength never possible with ordinary wire rope.



## Tuffy Takes the Danger Out of Kinks

In the first place, Tuffy Slings are not likely to kink at all. Try to kink a Tuffy. Even if you succeed with the aid of a vise, the kink can be easily straightened out with no material damage. Tuffy's machine-braided fabric won't take a "set" or deformity under the toughest of ordinary working conditions. So the danger of rope-weakening kinks is eliminated.

## FREE! New Tuffy Sling Handbook

Revised and enlarged edition of famous sling manual. Covers all the bases in selection and use of Tuffy Slings and sling fittings. Gives types, dimensions, weights and rated loads. Even includes safety-approved standard signals used in operation of various equipment. Send for your free copy now. Write **Union Wire Rope Corporation, 2224 Manchester Ave., Kansas City 26, Mo.**

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Armco



**Aluminized Heat Barrier Garments**  
**protect melters from splash, radiant heat**  
**...let them work longer in hot spots**

Now men who have to work in hot spots—have to face temperatures that scorch cloth, burn skin in seconds—can beat the heat with light weight, flexible reflective-protective garments made of "Scotch-shield" Brand Aluminized Fabric.

Steel melters, for example, can work in front of an electric furnace during the full tapping and slag removal period without discomfort—and with minimum danger of spatter burns.

With this better protection against radiant heat and ease of action, repair and maintenance work can be done without shutting down furnaces and kilns—with speed and safety impossible with conventional "insulation types" of safety clothing.

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- d. "Keep management advised as to accident experiences.
- e. "Assist management in the execution of the accident prevention program . . .
- f. "Keep injury records.
- g. "Make statistical analyses and report on accident experiences.
- h. "Conduct research on special safety problems.
- i. "Maintain a film and safety reference library.
- j. "Check construction prints for elimination of safety hazards and for conformance to safety standards. Check all new or revised installations before operation to see that recommendations are followed and adequate employee protection is provided.
- k. "Assist in maintaining interest in safety programs by special safety meetings, posters, and printed material.
- l. "Coordinate efforts of safety committees.
- m. "Make inspections and submit reports to management.
- n. "Collaborate with management in formulating general plant safety rules.
- o. "Assist in formulation and issuance of all safety rules.
- p. "Give safety indoctrination instructions to all new employees.
- q. "Maintain safety equipment used in the plant."

**Company 7**

"Safety officers will keep management and supervision informed of hazards which may exist or develop and of any weaknesses in the program of safety activities. They will make continuous inspections, suggest and procure protective devices and equipment, recommend safety measures and follow them through to adoption, and suggest means of minimizing the effects of mishaps that occur. As planning and service men, they will work closely with and through management and supervision to prevent accidents, doing the detailed work necessary to maintain and strengthen the safety program."

**Company 8**

"The primary responsibility for the development and coordination of the accident prevention program in the division rests with the personnel division. Major personnel



activities will include the coordination of employment, medical, and training activities to ensure a high standard of employee placement and instruction in safe working habits and adequate supervision to ensure observance of safe practices.

"The personnel division will establish and maintain a system for reporting, investigating, and recording all accidents for the purpose of collecting facts pertaining to the elimination of injuries and filing of accident reports as required by local, state, and federal authorities and company policies."

#### Company 9

"The safety supervisor will be responsible for the administration of the company's safety policy and program. . . .

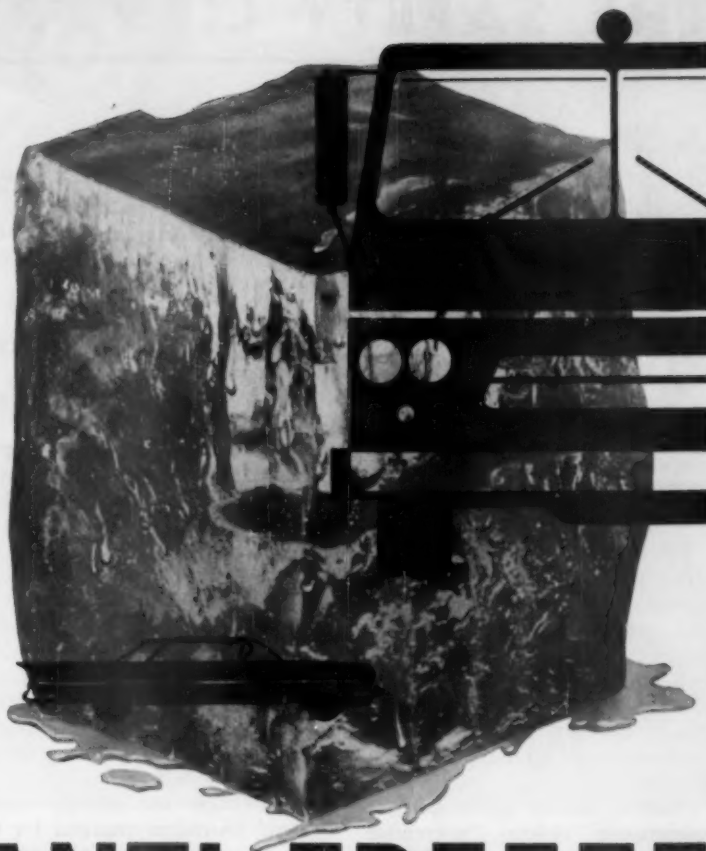
"To eliminate hazards, the plant safety supervisor will:

- a. "Assist in setting up and maintaining proper standards for all phases of good housekeeping, including matters such as safe floor loads, material piling, floor conditions, aisles, proper storage, containers for waste and its subsequent removal.
- b. "Assist in setting standards for point-of-operation guarding and follow them through.
- c. "Promote safeguarding [of] dangerous equipment and supplies.
- d. "Inspect plant property, equipment, material, machines, operations, and personnel to determine unsafe conditions and practices.
- e. "Suggest corrective measures.
- f. "Assist the supervisor in investigating accidents to determine their cause so that corrective action can be taken to prevent recurrences.
- g. "Aid in setting standards for the proper placement of employees with physical limitations.
- h. "Assist in educating workers in the use of protective clothing and equipment.

"In carrying out an effective educational safety program, the plant safety supervisor will:

- a. "Lead in conference-type meetings with key men and supervisors.
- b. "Aid and supervise others in the performance of their responsibilities, keeping them abreast of

—To page 72



# ANTI-FREEZE AGENTS

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. . . produced safely when protected by  
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# THE SAFETY LIBRARY



Reviews of books, pamphlets and periodical articles of interest to safety men

By LOIS ZEARING, Librarian, NSC

## Plant Maintenance, Engineering Techniques

*Techniques of Plant Maintenance and Engineering, Vol. X.* Proceedings of the technical sessions held concurrently with the 1959 National Plant Maintenance and Engineering Show, Cleveland, January 1959. Published by Clapp and Poliak, Inc., New York 17. \$10.

THE PUBLICATION embodies talks made by 29 speakers, representing a wide diversity of industry and various levels of management and supervision. Also including discussions following the remarks of each speaker, this publication contains the remarks and developments of 10 round-table discussions.

Contents include explanations of maintenance systems, preventive maintenance, charts and check lists, maintenance and repair costs, safety and maintenance, training fundamentals, and maintenance by contract.

The publication is recommended particularly to companies not operating a maintenance program but considering the advisability of instituting such a program, and to companies having maintenance program difficulties.

C. J. LUEPKE

## Ionising Radiation Safety Code

*Manual of Industrial Radiation Protection, Part II, Model Code of Safety Regulations (Ionising Radiations).* Published by The International Labour Office, Geneva, Switzerland. 1959. 75¢. 54pp.

The *Manual of Industrial Radiation Protection* consists of five parts. Part II of this manual, now available, is titled, "Model Code of Safety Regulations (Ionising Radiations)." It is intended to be an aid to governments and industry drafting or revising their own regulations and safety codes.

The code applies to industrial

establishments where radioactive substances, sealed or unsealed, are or are proposed to be stored, manipulated, operated, or used, or where equipment capable of producing ionizing radiations is or is proposed to be operated or used.

The discussion of MPD (maximum permissible dose) is in accordance with the recommendations of the International Commission on Radiological Protection adopted in September 1958, and is clearly written. There is also a discussion of medical examinations and health records, which should be helpful to those establishing a program involving radioisotopes.

Nine pages are devoted to the general provisions required for the safe use of sealed sources and to equipment capable of producing penetrating radiation which is an external hazard. It discusses warnings, radiation installations, sealed sources (including storage and transport), industrial gamma radiography, industrial X-ray radiography, thickness gauges, static eliminators, industrial X-ray fluoroscopy, and X-ray diffraction.

The section on unsealed sources applies to sources that may be an internal hazard, as well as an external hazard, and they apply in particular to the preparation, adaptation, use, and storage of unsealed radioactive sources in industry. They do not apply to chemical and metallurgical factories treating natural radioactive materials or nuclear fuel, or facilities for the bulk storage of radioactive substances, or nuclear reactors.

This is an excellent publication, and should be helpful to those contemplating the industrial use of radioisotopes. Parts III, IV, and V will also be welcome additions to the literature on radiological safety.

E. L. ALPAUGH

## BOOKS AND PAMPHLETS

### Aeronautics

*Crash Rescue and Fire Fighting Information—F4H-1 Aircraft.* 1959. McDonnell Aircraft Corp., Box 516, St. Louis 66, Mo.

*Human Engineering Tests of Selected Aircraft Anti-Collision Light Systems.* John E. Robinson, Jr. July 1959. 194 pp. Applied Psychology Corp., 4113 Lee Highway, Arlington 7, Va. (Prepared for Bureau of Aeronautics, Dept. of the Navy)

### Atomic Power

*Research and Development in Reactor Safety: A Program of the United States Atomic Energy Commission.* 1959. 66 pp. Superintendent of Documents, Washington 25, D. C. 65c.

### Mines

*Comparative Studies of Explosives in Granite.* 1959. 28 pp. Distribution Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (Report of Investigation 5509).

*Firefighting Facilities at Coal Mines Compared with Those at Other Industrial Plants.* 1959. 12 pp. Distribution Section, U. S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (Information Circular 7931).

*Proceedings of the Coal Mining Institute of America, 1958.* 1959. 207 pp. Institute, J. M. Lowe, Secy.-Treas., 813 Mifflin Ave., Pittsburgh 21, Pa.

### Pipes and Piping

*American Standard Code for Pressure Piping: Petroleum Refinery Piping B3-1959.* 126 pp. \$4; *Oil Transportation Piping B31.4-1959* 32 pp. \$2.50; *Gas Transmission and Distribution Piping Systems B31.8.* 1958. 80 pp. \$2.50. The American Society of Mechanical Engineers, 29 West 39th St., New York 18.

### Radiation

*Microwave Radiation.* August 1959. Association of Casualty and Surety Companies, 60 John Street, New York 38. (Special Hazards Bulletin Z-113, Vol. XII-1959. pp 28-36).

### Rubber Industry

*Report on Causes of Running Trip Accidents and Suggested Means for the Prevention of Such Accidents.* 1959. 80 pp. National Joint Industrial Council for the Rubber Manufacturing Industry, 236 Royal Exchange, Manchester 2, England.

—To page 102



*America's top corporations\* keep right on proving . . .*

## The safest work gloves always cost the least

Whether plant safety is your main job or one of your secondary responsibilities, you know from experience that there's no substitute for top quality protective equipment. The only problem is deciding which products *are* the very best on the market.

When it comes to hand protection, more and more companies are solving this problem the sensible, scientific way. They're accepting Edmont's standing invitation to make their own on-the-job comparison tests. And after analyzing the results, they are specifying Edmont work gloves for more and more types of industrial operations. For example:

**Case No. 632:** *Handling thin, sharp-edged steel sheets, an Edmont recommended glove gave 4 times longer protection than the costly leather gloves previously used . . . cut glove costs 73%.*

**Case No. 642:** *Unloading rough lumber, an Edmont recommended glove gave over 2½ times longer protection than the leather palm gloves previously used . . . cut glove costs 51%.*

**Case No. 663:** *Handling hot solder bars, an Edmont recommended glove gave 2 times longer protection than the leather palm gloves previously used . . . cut glove costs 51%.*

These three cases are typical of thousands which prove that modern Edmont coated work gloves not only protect longer, but also cost less, especially since the recent price rises of leather and cotton gloves.

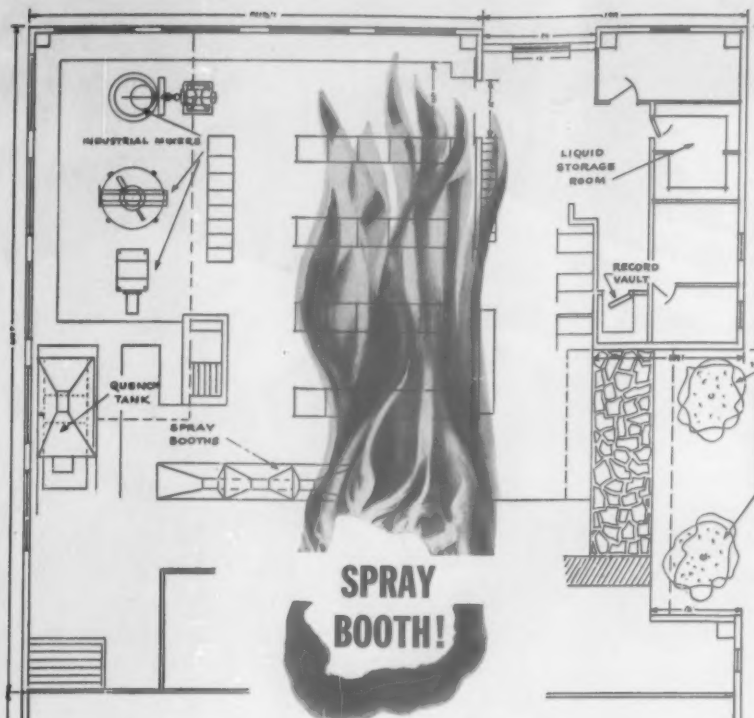
Edmont's "Grab-it" glove, used in the above tests, is Extracoated with rough-finished natural rubber, which makes it the safest general handling glove. It cushions hands against shocks and vibrations, has excellent resistance to

cuts, snags, abrasion and heat, and is unequalled for positive non-slip grip, wet or dry.

**FREE TEST OFFER TO LISTED FIRMS:** We make many types of natural rubber, plastic, and neoprene coated gloves to fit different job requirements. Tell us your operation, materials handled, temperature condition. We will recommend correct glove and send samples for on-the-job testing. Write Edmont Manufacturing Company, 1205 Walnut Street, Coshocton, Ohio. In Canada, write MSA, Toronto.

\*Company names and full details on request.

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Guard spray booths, dip tanks, record vaults against the danger of fire! Guard them 24 hours a day with a Kidde fully-automatic carbon dioxide fire extinguishing system. Finest fire protection on the market today, Kidde systems give you these outstanding features that come from more than thirty-five years' experience!

*All operating parts completely enclosed to guard against fouling or accidental operation.*

*No clumsy triggering methods or falling weights.*

*Self-contained; no outside power needed.*

*Visual indicators to show if system has been operated.*

*Easy testing of all operating parts.*

*No parts to replace after operation or test.*

Fast-acting clean carbon dioxide does the job that no other extinguishing agent can do: snuffs fire out in seconds, then vanishes into thin air. Won't harm valuable machinery, leaves no mess to clean up. Write for Kidde's pressure operated carbon dioxide fire extinguishing systems booklet today.

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Walter Kidde & Company of Canada Ltd., Montreal—Toronto—Vancouver

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—From page 69

pertinent information [by the use of]: movies, instruction cards or booklets, rule books, posters, employee handbooks, outside speakers, company publications.

- c. "Aid and advise safety committees in their duties.
- d. "Set up a safety training induction program for new employees.
- e. "Maintain records and make special studies of trends and changes [in] accident frequency and severity rates, accident cost, and types of injuries, and issue reports."

### Company 10

"The plant safety director has the responsibility of *integrating with plant operations the safety activities of management, supervisory personnel, and the workers.* His chief function is to supply these groups with *ideas and information* to make the program work. . . .

"An important phase of his work is the preliminary instruction of the new employee at the time of the initial interview. . . . Although the safety director has the authority to stop unsafe practices and issue orders for the correction of unsafe conditions, he should do so through the supervisor, except in case of emergency."

### Policy for Employee Responsibility

#### Company 1

"Workers are expected to follow safe procedures and to take an active part in the work of protecting themselves, their fellow workers, and the plant. They shall be encouraged to detect and report to their supervisors hazardous conditions, practices, and behavior in their work places and to make suggestions for their correction."

#### Company 2

"Your cooperation is . . . necessary for the protection of yourself and others. It is important that you follow safety rules, that you take no unnecessary chances, that you use all safeguards and safety equipment provided, and that you make safety a part of *your* job, too.

"In case of injury, please report promptly to your supervisor, and get first aid or medical help without delay. If you see any hazardous condition, please report it, so it can be corrected. Your safety sugges-



tions will be sincerely appreciated.

"Accidents and fires hurt all of us in many ways. You and your family suffer if you are injured; all employees lose, because accidents are wasteful. They mean lost production, higher operating costs, and inefficiency. Please do your part to help us make this an even safer and better work place."

#### Company 3

"The company shall expect the individual employee to cooperate in every respect with the plant safety program so that the operations may be carried on in such a manner as to ensure the safety of himself and his fellow workers."

#### Company 4

"The employee has a responsibility to himself for his own safety, but he likewise has a responsibility to his family, to his fellow workers, to the community, and to his employer, by whom he is paid.

"In the performance of his duties, therefore, he shall be expected to observe safe-practice rules, as well as instructions relating to the efficient performance of his work. The ideal in safe and efficient industrial operation is reached only when all employees are safety-conscious and keenly alert mentally and physically. [They should]:

- a. "Comply with instructions of supervisors.
- b. "Report all accidents and injuries immediately.
- c. "Submit recommendations for safety and efficiency.
- d. "Know their exact duties in case of fire or other catastrophe."

#### Policy for Promotion, Training, and Education

#### Company 1

"Safety rules and instructions as to safe practices should be set down in written form covering each job in the plant. This material should be used as the basis for safety instruction of new employees and of employees transferred to new jobs.

"Each new employee should be thoroughly instructed in general safety policies, rules, and procedures before being referred to his supervisor for job training. In turn,

# ONOX®

## SKIN TOUGHENING PREVENTS ATHLETE'S FOOT

Skin specialists say the best way to prevent Athlete's Foot is to increase the skin's resistance to fungus growth\*. That's what Onox does. It keeps shoe-softened skin as tough and healthy as your hands.

Onox has been used for many years by clubs, schools, and over 70% of the largest U. S. companies for the treatment and prevention of Athlete's Foot.

Advertisement Club, Health, Beauty, U.S.A., 1954



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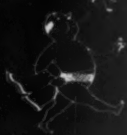
### 60-DAY TRIAL OFFER

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If you are not completely satisfied after 60 days use, you pay nothing... just return the sprayer freight collect.

Easy to use.  
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The aluminum foil helps reflect 90% of all radiant heat—the major cause of worker discomfort, fatigue and inefficiency. The fireproof asbestos supplies flame-resistant sturdiness. In combination, the aluminized asbestos cloth retains great strength, even after long exposure to temperatures to 1400°F.

For data on J-M Aluminized Asbestos Cloth for curtains, shields, blankets, hoods, and other needs—write Johns-Manville, Box 14, New York 16, N. Y. In Canada, Port Credit, Ontario.



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the supervisor should review with him thoroughly the safety measures of the particular job before he starts to work. Subsequently, the employee should be followed up closely, to make sure he understands and is carrying out the safety instructions applicable to his job. . . .

"The cooperation of the individual employee is vital to the success of a safety program. Continued education is required to make certain that all concerned—management and employees alike—do their part in protecting the safety of the individual at all times. Every available medium—safety booklets, posters, signs, and plant papers—may be used to good advantage in furthering the objectives of such a program."

### Company 2

The safety department is to:

- "Promote the safety idea with the object of maintaining and creating safety consciousness or attitudes on the part of all employees through recognized and newly developed methods.
- "Develop and recommend safety training activities in all areas of operation.
- "Prepare safety promotional material for the assistance of all departments in the safety educational program and serve as a clearinghouse for the exchange of ideas developed in the field."

### Company 3

"To accomplish maximum safety in our operations, we provide adequate staff assistance:

- "To develop, coordinate, and direct accident prevention efforts.
- "To establish necessary training and instruction for supervisors.
- "To coordinate all efforts in maintenance of safe working conditions and practices.
- "To evaluate problems and causes of accidents and prescribe corrective action.
- "To review progress in control of outstanding accident causes.
- "To prepare necessary statistics for interpretation of trends and over-all experience."

### Company 4

"While safety is the responsibility of all levels of management, the prime responsibility for the safe conduct of operations rests with every supervisor. By reason of his

position, he can most effectively carry the safety program directly to the employees.

"The supervisor must provide the leadership, proper example, and administrative control for the accident prevention program. Safety supervisors, personnel staffs, and the industrial relations division personnel will assist the supervisor in the necessary planning, education, and enforcement matters which make up the safety program. The company will provide first-aid training programs and educational material in the form of posters, pamphlets, training films, and safety record boards to develop and maintain employee interest in the safety program. . . .

"Safety is a subject of common interest to employees and management. Through the joint effort involved in conducting a safety program, the participation of all concerned will help promote fellowship, understanding, and cooperation in all other phases of human relationships in our industrial activities."

### Company 5

"The accident prevention objectives of this company include the following:

- "To promote and implement a comprehensive safety program for all employees to the end that everyone is safety-conscious both on and off the job.
- "To eliminate, or to provide suitable protection against, all recognizable occupational hazards.
- "To devise procedures and practices that minimize the risk of accident.
- "To provide facilities for treating injuries promptly and adequately.
- "To provide fire protection equipment and maintain it in working condition.
- "To rectify insofar as possible any condition that presents a fire hazard.
- "To instruct all employees in the action to take in the event of a fire or other disaster.
- "To maintain and implement a plan for disaster control and keep it up-to-date."

### Company 6

"Safety education and training for foremen and assistants is includ-

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National Safety News, November, 1959



**now  
the boot that  
really protects**

**has a sole  
you can walk on  
all day!**

Great news for men who work where the going is tough: Thom McAn's 9-inch glove-leather boot now owns a Ripple® Sole! Result? More real comfort than has ever been built into a boot before. You get protection, support, and shock-absorber action every step of the way. Amber glove leather; brown, oil-resistant, non-marking sole. Leather-lined steel toe-box and steel shank. S-4586, sizes D, EE 6-12. Send coupon for details of our safety-shoe line plus free safety posters.

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RUBBISH  
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REFUSE  
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PLEASE  
HELP  
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Nothing fosters accidents, and inefficiency, like dirt and disorder. Inevitably, production losses, mistakes, accidents occur where industrial housekeeping is poor.

Plants throughout the country enlist employee aid in this important undertaking by the use of INDUSTRIAL GOOD HOUSEKEEPING SIGNS from **STONEHOUSE**. Constantly reminding, these signs work efficiently, endlessly, at lowest possible cost. Each sign is made of enduring, tested materials, and manufactured in accordance with American Standard specifications.

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SIGNS

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ed as a part of our regular training procedure and is accomplished by conference training methods.

"To the individual employee, safety is a part of his job training, starting with the consideration of safety in the tool design and carried through the various phases of time and motion study and job training on the basis that an operation must be safe to be efficient."

### Company 7

"Continuous safety education shall be carried on to create and maintain the interest of personnel in the prevention of accidents. Included in this program shall be:

- a. "The conducting of safety training classes in conjunction with the established orientation and leadership classes of the personnel department.
- b. "The use of safety bulletins, posters, house organ, and films to the extent that may be determined feasible.
- c. "Employee safety meetings."

### Company 8

"Every new employee hears a talk on safety problems and regulations in his area of work. This talk is given usually by the safety engineer.

"The employee's immediate supervisor then gives him an on-the-spot rundown of the safety requirements for his particular job. We recommend also that plant managers send letters on the subject of safety to all new employees.

"Incidentally, a modified form of this procedure is used for employees returning to the job after a prolonged absence for any reason. . .

"Each supervisor talks safety to at least one of his men every day.

"We've found from experience that these man-to-man talks are more effective and productive than group discussions. Safety becomes a personal matter between each employee and his supervisor. . .

"Safety posters and displays, both simple and elaborate, are used to good effect.

"Such devices as the 'days-without-a-lost-time accident' board help to arouse employee interest and enthusiasm.

"Plant newspapers are extensively used. . .

"There are also many excellent



motion pictures on safety which are widely and most effectively used."

#### Company 9

"Training and job instruction are direct functions of management and its agents. Men must be trained and informed in order to obtain their best performance. . . .

"The safety division distributes safety education and other publications to the plant safety supervisor, which can be used in plant safety meetings.

"Further training can be gained by foremen and supervisors through making safety inspections, investigating accidents, and making job analyses for safety procedures.

"The following is a list of basic approaches to the problem of educating employees [in] safe operating habits that should be used:

- a. "Develop and publish an employee's handbook containing the basic plant safety operating procedures.
- b. "Review this material with all new employees so they become familiar with the company safety policy before they report to the department where they are to work.
- c. "The induction of a new employee should also include: safety talk by supervisor; tour through department [with] supervisor, who explains operations and safety measures; assignment of supervisor or key employee for thorough job instructions; [and instruction of] new employee as to how to report accidents and to secure first aid.
- d. "All jobs shall be studied for operating hazards.
- e. "Department safety bulletin boards should be kept posted with safety material, bulletins, accident charts, safety messages, posters, etc., and should be kept in clean and neat condition.
- f. "Foremen and supervisors should be on the alert to detect employee unsafe working habits so that additional training can eliminate these habits.
- g. "When employees have accidents (both minor and lost-time), the foremen or supervisors should take advantage of the opportunity of talking to the employees about the causes of the accidents and about other safety factors involved in their jobs.



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h. "Safety messages of interest to all employees may be prepared on special forms for posting on the bulletin boards."

#### Company 10

"Good safety practices may be strengthened by personal contact between the foreman and the employees under his supervision. These contacts consist of short on-the-job talks on safety subjects at frequent intervals. Reports of such talks are reviewed periodically by the department superintendent. Rec-

ords indicate that once foreman-employee safety contacts are established, misunderstandings of the objectives of the safety program that may have existed between them fade with the employee's realization that the foreman has a genuine interest in his personal welfare. . . .

"Under the supervision of the medical department, first-aid training is included in the safety program. Each year a team of six employees for every 750-1000 workmen at each . . . plant receives a minimum of 15 or a maximum of

20 hours of first-aid training over a three-month period. At the conclusion of each training program, the various plant teams compete against each other at their respective locations for prizes during a field-day type program. Each team of six is permitted only one member who previously has taken the company's first-aid training course. The reason is to train as many men as possible in first-aid procedures against time of possible emergency."

#### Policy for Off-the-Job Safety

##### Company 1

"Special attention should be given to off-the-job safety as employees have more accidents away from work than they do on the job. Our objectives should include efforts to promote the safety of employees and their families."

##### Company 2

"Assume active leadership in promoting off-the-job safety among your employees, and contribute generously of your time and money to safety councils and other community-sponsored safety programs. Money spent for community safety is a sound business investment, not only in terms of deep human satisfaction that comes from the knowledge that you are protecting your fellow man, but also in terms of improved public and employee relations and real financial benefits for your company."

##### Company 3

"Programs shall include well-planned efforts to promote the safety of employees and their families while off the job."

#### ACKNOWLEDGMENT

This data sheet represents a compilation of published policies for accident prevention by members of the National Safety Council. The preliminary evaluation and analysis was prepared by a special committee of the Industrial Conference, under the chairmanship of D. T. Mould, Director of Safety for General Motors Corporation. The introductory portion and the final organization were prepared by the Council's Industrial Department staff. The data sheet was submitted to the entire Industrial Conference membership for review, and has been approved for publication by the Publications Committee of the Industrial Conference.



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—From page 23

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—To page 106

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# **The Journal**

## **OF THE AMERICAN SOCIETY OF SAFETY ENGINEERS**

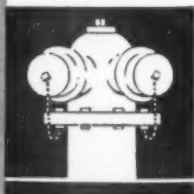
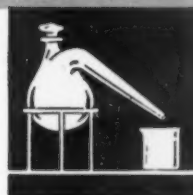
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**NOVEMBER, 1959**

## *Award Plan Encourages Journal Article Authors*

■ WITH THIS ISSUE the *Journal* is rounding out its fourth year of publication. In its brief history, significant changes have taken place in the American Society of Safety Engineers. Just within the last year, the Society's national headquarters has moved into an independent office, away from its friend and former landlord, the National Safety Council. Also, a new national secretary and managing director has been elected to head Society administration.

Another important development which should directly benefit the *Journal* and its readers has been the establishment of an Annual Technical Paper Award Plan, cosponsored by the Society and Veterans of Safety to recognize the best articles, by members of either organization, which have been accepted by or published in the *Journal* during the award year.

In addition to award plaques and Honorable Mention Certificates, first and second prize honorariums of \$100 and \$50 have been established. Initial awards under the plan are being made this October 20 at the National Safety Congress shortly after this *Journal* issue goes to press.

In the past the *Journal* has tried to give its readers stimulating material on as many phases as possible of the safety field. It is our hope and belief that this new award plan will encourage authors to make more contributions to our publication so that we may serve our readers with an even broader coverage of accident prevention than we have been able to achieve during our first four years.—Editor.

## **AMERICAN SOCIETY OF SAFETY ENGINEERS**

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## OUR PRESIDENT SPEAKS ON SAFETY

■ BEING ELECTED PRESIDENT of the American Society of Safety Engineers is a signal honor for me and I am deeply appreciative of this expression of confidence from our membership. The defined objectives of our Society, together with the high standards of professional performance established by our members, makes this office one of great responsibility and trust. Within the limits of my ability, during my term I shall try to give our Society a leadership, consistent with the tradition created by my predecessors, which I hope will help our Society grow both in stature and professional recognition.

Just having taken office, I find there is one subject I particularly want to discuss with you. At present, some of our members are questioning whether we are properly named and whether we are strictly an engineering society. Apparently there is confusion in some minds as to the definition of safety engineering and proper qualifications for Society membership.

It is my personal opinion that safety engineering is not nearly so much a matter of *definition* as it is a matter of *performance*. The important considerations are what we do and how well we are equipped to do it. Whether or not we are called engineers is not nearly so important as that we be professionally qualified.

However, we cannot escape the fact that the fundamental principles of accident prevention are basically engineering in their original concept. The genesis of this philosophy is expressed in the foreword of the Canons of Ethics for Engineers, which states: "It is the engineer's duty to interest himself in public welfare and be ready to apply his special knowledge for the benefit of mankind. . . . He will have due regard for the safety and life and health of the public

and he will guard against conditions that are dangerous or threatening to life, limb or property in work where he is responsible."

With today's rapid technological advances, we have observed many changes in the concepts of engineering as originally expressed by the various "founder" societies 40 to 50 years ago. Most significant of these changes, I believe, is that human engineering has taken an equal place with the technical phases in almost every branch of engineering.

It also is true, in my opinion, that we in safety can draw a close parallel between our profession and that of medicine. Both are dedicated to the preservation of human life. In medicine, the era of the general practitioner seems to be almost over. We now have the diagnostician, surgeon, pediatricist, psychiatrist, ophthalmologist, etc., with professional training in their specialties in addition to the broad medical education required for all.

The same is true in accident prevention work; we too are moving into an age of specialization. Some of our members serve the chemical industry, or steel, petroleum, public utilities, atomic energy, traffic, farm and home, highway, small business, schools. Others are engaged in teaching, statistical work or research. Like the doctor, the modern safety engineer seeks more specialized training and a higher degree of technical competence to meet the increasing demands of his profession.

We have established a good name—American Society of Safety Engineers—and a proud heritage. It is up to us to keep it that way. Let's not cloud the issue by jousting with definitions. Let's concentrate on keeping our membership standards at a high professional level, based on demonstrated technical competence, so that the abilities of our membership may always be equal to the modern world's ever expanding needs for our services. Only in this way can we properly protect human life and conserve physical resources. And of course this is our responsibility for today and our challenge for tomorrow.

*John F. Jones*

JOHN F. JONES, PRESIDENT  
AMERICAN SOCIETY OF SAFETY ENGINEERS



# EVERYBODY UNDERSTANDS MONEY

BY PHILIP J. BAILEY

*for reports to management, author replaces frequency and severity rates with "estimated loss ratio" as more accurate measure of safety performance*

**B**ACK IN 1951 when I changed employers, I succeeded in selling my new boss on the idea that frequency rates and severity rates should be thrown out of the window. It was because he trusted my judgment in these matters that he gave me his permission to swing away from the accepted American Standard Method of Recording and Measuring Work Injury Experience.

We have not used it since *for the purpose of determining our safety performance.*

Of course we still compute frequency and severity rates, because they still are necessary for reporting to the National Safety Council, the Bureau of Labor Statistics and other government agencies.

But we do not use them for any other purpose.

Why did I insist that we do this when practically every other company with an organized safety program uses and accepts these two established formulas for measuring accident experience? I insisted—and won my point—because I believed that frequency rates and severity rates cannot accurately and consistently measure safety performance and injury cost.

I was further motivated because, through the years I had been in the safety business, I had seen too many safety men become fanatics about these twin decimal point demons and do almost anything in order to hold them down in size.

I had seen too many reportable injuries that remained "first aid cases." I had heard safety men swapping stories about the painfully injured people who were heckled into hobbling into work to be temporarily employed on "regularly established jobs."

Most of these jobs, I found, were *established regularly* to take care of working cripples who should have been at home giving their work wounds a chance to heal.

But instead, these "first aid cases" had to help win a plaque or a certificate or a flag—or help to complete the million manhours of "no lost time"—all of this so that the safety man could boast to management about a frequency rate of low-point-zero and a severity rate of microscopic size.

Meanwhile, back at the plant hospital, business was booming. And the experience rating calculated by the insurance company continued to push the premiums for workmen's compensation upward to take care of the increasing costs of the injuries, which continued to mount in number despite the official published frequency and severity rates.

Frequency and severity rates, no matter how honestly they are used, still are not good measuring devices for accident experience. They place entirely too much emphasis on the stamina of the injured person and on the part of the body that was injured.

Finger injuries in many industrial plants frequently are not considered to be reportable. Only occasionally will they become a part of the frequency rate; hardly ever are they reported in the severity rate. Yet if the same type of accident causes a *toe injury*, the accident probably will appear statistically in both the frequency and the severity rates.

In heavy industry, where the light job is unlikely to be found, severity rates are higher than in light industry. One of the reasons for these higher rates is that regularly established jobs cannot be found for the temporarily crippled employee.

Occupations requiring agility, like construction work, are more likely to experience disabling injuries than occupations where the employee operates a machine or works at a bench.

Frequency rates and severity rates *do not reflect accident costs.*

Checking my own accident cost figures, I find that in one year when we had a frequency rate of 9.5 and a severity rate of 350, my accidents were costing me \$6.66 a thousand manhours. Yet, in another year when my frequency rate was down to 3.5 and my severity rate was 127, my accident costs went up to \$9.23 a thousand manhours. Both severity rates included the time charges and the costs are actual costs, not part of any 4-to-1 or 5-to-1 formula.



Philip J. Bailey, safety engineer for Walter Kidde and Co. since 1951, entered safety work 18 years ago, joined our Society in 1950 and is a member and past treasurer of the New Jersey Chapter. Author of many safety articles, his paper, "The Mean Amines," was published in the November, 1956, *Journal*.



## MONTHLY ACCIDENT EXPERIENCE

Month

June

1959

	THIS MONTH	PREVIOUSLY REPORTED	CUMULATIVE
Number of Manhours Worked	310,152	1,434,086	1,744,238
Number of Reported Accidents	16	28	44
Frequency Rate of Reported Accidents	51.6	19.5	25.2
Number of Disabling Injuries	1	7	8
Frequency Rate of Disabling Injuries	3.2	4.8	4.6
Number of Actual Days Lost	62	191	253
Severity Rate of Actual Days Lost	200	133	145
Number of Permanent Disabilities	0	0	0
Time Charges	0	0	0
Severity Rate of Time Charges	0	0	0
Total Incurred Loss (Estimated)	\$2,362.00	\$6,473.00	\$8,835.00
Loss Ratio per 1,000 Manhours	\$ 7.62	\$ 4.51	\$ 5.06

## CUMULATIVE LOST TIME AND DISABLING INJURIES

ACC. NO.	NAME OF INJURED	DEPT.	DATE OF ACCIDENT	CODES			DAYS LOST	TIME CHGE.	MEDICAL & COMP. COST	
				AGENCY	CAUSE	RESP.			ESTIMATED	ACTUAL
3	A..... K.....	940	2- 6-59	8	23		29		\$ 450.00	
4	A..... J.....	720	2-19-59	8	23		11		192.50	
7	R..... S.....	520	3-10-59	16	5		61		1,250.00	
15	A..... O.....	311	4- 6-59	11	9		20		410.00	
16	G..... S.....	370	4-11-59	23	5		57		433.00	
22	A..... C.....	530	4-14-59	1	13		25		500.00	
25	F..... S.....	777	5-27-59	16	5		32		2,000.00	
32	M..... T.....	772	6- 3-59	11	5		18		350.00	

Monthly Accident Experience Report—second section lists only lost time or disabling injuries (cumulative)

Even though I insisted and won my point with my boss that we stop using frequency and severity for measuring safety performance, I knew that I had to have a yardstick. I needed a true, honest, firm yardstick to see and measure where we were going, safety-wise and cost-wise.

So I introduced my boss to "Estimated Loss Ratio"—and they have been "going together" ever since. Over a period of eight years, we have found it to be an excellent device for measuring accident prevention performance because it measures that performance in *real dollars*. Money is something that management is interested in and understands.

What is Estimated Loss Ratio?

For us it is the estimated cost of work injuries per each thousand manhours worked.

What is the formula?

*Manhours, divided into Estimated Accident Costs, equals Estimated Loss Ratio.*

Now you probably are asking, "And just how does he go about getting his estimated accident costs?"

I get mine the hard way. I go down to the insurance company each month with the copies of our reported accidents clutched in my hands. I sit down with the claims supervisor and we quickly go over these injuries. And to the insurance company they are injuries, not accidents. Together we estimate a reasonable reserve for each reported injury. We do not always guess it right on the nose but the overall picture in our "guesstimations" averages out to within five per cent of the actual incurred losses.

Here is an example of how we might compute our Estimated Loss Ratio for a given month. This example is a fictitious example—but let us say that on

this mythical month we report nine injuries to the insurance company:

INJURED		ESTIMATED RESERVE
John Doe	5/2	\$1,000.00
Geo. Brown	5/7	25.00
Ed. Hart	5/8	40.00
M. Sadler	5/11	320.00
L. Williams	5/19	25.00
K. Anders	5/23	1,500.00
B. Totten	5/24	100.00
N. Norman	5/24	40.00
W. Nice	5/29	25.00
		<hr/> \$3,075.00

Manhours for the month: 356,841.  
356,841 manhours divided by 1000 (to reduce from millions to thousands), equals 356.8 divided into \$3,075.00 equals \$8.59 per thousand manhours, the estimated cost of accidents for the month—or, Estimated Loss Ratio.

During the years that we have been using this formula, we have established a line at \$7.00 per thousand manhours and we attempt to stay below this line. For us an \$8.00 loss ratio is "satisfactory." \$7.00 is "good." \$6.00 is "very good." \$5.00 is "excellent." Under \$5.00 is "superb!"

A word about the two charts appearing with this

article and why there appears at first glance to be a difference in the level of the loss ratio for June, 1959:

The "Monthly Accident Experience" table on page 51 is exactly that—the experience on a month-to-month basis inside a calendar year. Shown is the June, 1959, experience under "This Month." Under "Previously Reported" is the experience for the first five months of 1959. The "Cumulative" is of course the accumulated first six months of 1959. The "Cumulative Lost Time and Disabling Injuries" section lists only those injuries which fall into either or both of those classes.

The "Loss Ratio" chart shown below differs from the monthly experience table only in the fact that it is a *moving 12 months average*. Each point on this chart shows our loss ratio, not for that month but for the 12 month period ending with the indicated month.

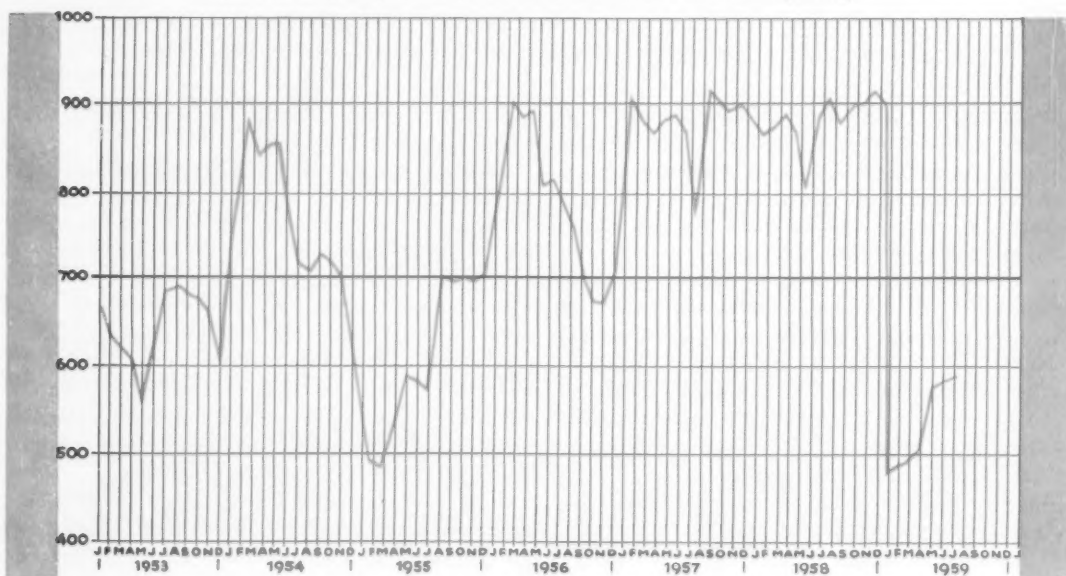
The formula for this chart: I used 1952 estimated costs and manhours as a base. Each month I subtracted the estimated costs and manhours for that month of the previous year, and added these items for the new month. Then: manhours divided into total cost equals Estimated Loss Ratio for the 12 month period.

When I tell our works managers and superintendents in our general safety meeting that last month's Estimated Loss Ratio was \$7.62, someone is certain to demand immediately, "And what was it a year ago?"

Everybody understands money.

#### ACCIDENT EXPERIENCE CHART

loss ratio in dollars per thousand manhours—cumulative 12 month moving average



# THE MOST MISUNDERSTOOD SUBJECT IN ACCIDENT PREVENTION

BY MERRILL C. M. POLLARD

**O**NE OF THE TROUBLES with most of us in safety work is that we tend to complicate the problems with which we are concerned. We attempt to build importance through the development of an organization. We assume responsibilities that are not rightfully ours. At the same time, we are much too modest with the people who are important to our progress.

The primary reason for the position in which we find ourselves today, I believe, is that we fail to understand the fundamentals of accident prevention. Having no sound basis of understanding, our effort is misdirected and ineffectual. That is why the annual waste of human life goes unchanged year after year. We are not good salesmen because we don't know our product. We only know that it is good and desirable and people ought to have some. We call ourselves *safety engineers*, concentrating our effort on engineering problems, when we ought to be using our talent as administrators of accident prevention programs.

There is no questioning the fact that our efforts are largely influenced by accidents that occur. This is the reason, more than anything else, that we should be familiar with all of the factors that are associated with the occurrence of an accident.

## PUBLICATIONS MISUSE BASIC TERMS

Pick up any publication dealing with safety that comes across your desk and you will find a misuse of such terms as injury, type of accident and cause. Each is a separate subject and, properly, the terms cannot be used interchangeably. This misunderstanding of terminology in large part explains our misdirected effort, I feel. When our own thinking is confused, how can we expect our managements to assess the value of our work accurately?

Along with the misunderstanding goes our failure to talk the language of production people. We give them facts based on terms we understand and we assume they know what we are saying. Here are some examples of lack of understanding that ap-

peared in a safety publication. Under the heading, "Types of Hand Injuries," was this listing: machine, point of operation; machine, belts and gears; caught between objects; sharp objects; hand tools; burns.

Only one of these classifications, burns, is a type of injury.

Under the heading, "Causes of Accidents," were these terms: lifting, pushing and pulling, falls, machine injuries, material handling, occupational disease, hand tools.

Not one of these classifications has ever been the cause of an accident. Yet how many of us read the article and said to ourselves, "By golly, that's good. It hits the nail right on the head!"

This is what concerns me most of all about our profession. It is time that we set our house in order. With correct facts, properly interpreted, I believe the accident toll in the United States can be reduced to a minimum of 2,000 deaths and 200,000 injuries a year—figures which represent the two per cent of accidents which have been termed "unpreventable." It would take far fewer people than the 7,500 members of the American Society of Safety Engineers. Properly directed, our effort can achieve this seemingly fantastic accomplishment.

Accident prevention is a comparatively simple matter when it is conducted in accordance with three basic principles. And these basic principles comprise the most misunderstood subject in accident prevention work today!

The three essentials of any successful accident prevention program are:



Merrill C. M. Pollard is director of safety for National Gypsum Co., where he has been employed since 1935. A member of the Society since 1941, he currently is serving a second term as Northeast Region vice president. For many years he has represented the Niagara Frontier Chapter on the Executive Committee.

1. An active and sincere interest.
2. A complete knowledge of accident facts.
3. A plan for corrective action based on this knowledge.

It makes no difference where we might choose to direct our effort—highway, home, occupation—these principles apply. In our work we frequently touch on one or another of them. Lasting results come only when all three are used at the same time—and continuously.

Attitude is of primary importance. No responsible person can display a lack of interest, be guilty of disregarding unsafe practice, permit unsafe conditions to exist, condone violations.

In more than two-thirds of our plants we have huge bins in which raw materials are stored. There is a rule that no person enters a bin unless he is wearing a belt with a line attached and that line must be attended by someone up on top. Yet one day, looking for the supervisor of a department, I found him—of course—alone in a bin and wearing no belt. How can he possibly have safety in his operations?

As long as railroad and highway crossings are permitted at grade level, people in automobiles will continue to be killed by trains at those crossings. Until all airplanes and all airports are equipped with the necessary electronic devices, people will meet death in accidents—most of which will be reported as due to pilot error. When boys living on farms are required to be licensed to drive any mechanical equipment, the toll of lives from unskilled operation will virtually cease.

These examples all involve the three basic principles of accident prevention: interest, knowledge and action. We in safety work have not yet sold the idea that what we have to offer is good for everyone. Look at the school fire in Chicago last December. Ninety-three people lost their lives because of a delayed alarm, inadequate exits, combustible material used throughout the interior and unpermitted accumulation of waste papers. These hazards have been known for years. There is not yet enough interest generated in this country to take action.

It must start with the President and our Congress and continue throughout the public offices on state and local levels. Each school board and church parish has a role to play. One can immediately hear the clamor, "But it will cost so much—we can't afford it." However, neither can we afford 100,000 lives and ten million injuries each year.

Anyone who terms this toll the "price of progress" ought to be ashamed of himself. How much more progress could have been added through the efforts

of the people killed or incapacitated as the result of accidents!

How many of us in safety work spend our effort in claims activity? This prevents no accidents. We should be spending our time in learning the causes so we can help keep others from being involved in the same kind of accidents. A complete knowledge of facts is the second principle for our work. Do we really look for *causes* or are we willing to accept *reasons* for accidents? Sometimes we hear too much about accident proneness and sociological factors and not enough about the practices and conditions that are the real causes. An excuse never prevented an accident. An alibi will claim more and more victims.

Not until the third principle, corrective action, is brought into our program will we get results. Here is where our three "E's" apply. Through engineering, enforcement and education our knowledge is applied and this creates and maintains interest. Once again we see the inter-relationship of basic principles. Use of the proper approach to our accident problem cannot help but involve all three.

#### SOCIETY STUDY VITAL TO PROFESSION

At the present time an important study is being made. A questionnaire was sent to each member of our American Society of Safety Engineers. While the response was outstanding for such surveys, still only 53 per cent of us returned the completed form. One interesting preliminary result: 97 different categories of titles used by people in our line of work were established. This indicates nothing but confusion. A look at corporate structure reveals a chairman of the board, a president, a vice president, a controller, a secretary, a treasurer. There is little question of responsibility in these titles. But just what is covered by a manager of loss prevention, a director of safety, a safety engineer, an accident prevention administrator, etc.? Where there is so much misunderstanding of fundamentals, perhaps this conglomeration of job titles is easily understood.

There is a story told of a couple on a motor trip who stopped at a country store to buy some gasoline and, while the tank was being filled, walked inside to look around. Much to their amazement all of the shelves were filled with packages of salt. As he paid the storekeeper, the driver remarked, "You must sell a lot of salt."

"No, I don't," was the reply, "but the fellow who sells me salt sure sells a lot of salt."

We must be like the salt salesman when it comes to safety. We must sell it convincingly enough to fill all of the shelves. The only way it can be done is through the application of the basic principles.



# BECOMING A REGISTERED PROFESSIONAL ENGINEER

BY JOHN D. CONSTANCE, P.E.

Illustrations by courtesy of McGraw-Hill Book Company, Inc.



Engineering experience must be of a grade and character approved by the Board of Examiners.

Recently proposed as amendments to the Society's Constitution were changes in qualifications for membership which would encourage professional engineering registration. Since this November Journal issue goes to press before the Society's October 20 Annual Meeting, action taken this year on the proposed amendments cannot be known prior to publication. However, the fact that these changes in Society membership requirements have come up for discussion now indicates a serious interest, among many of the Society's members, in the subject of professional registration.

The Journal therefore was most pleased when Author John D. Constance, P.E., agreed to prepare for Society publication the article which starts on this page. In this article Mr. Constance has summarized the basic ideas of his recently published book, *How To Become a Professional Engineer*. Journal readers wanting the complete text will find the book available for purchase from the McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36, N.Y.

**M**ORE AND MORE MEN engaged in engineering are obtaining professional licenses, as can be seen from the bar chart on page 56. Today total registration is close to 230,000. As licensing procedures are strengthened and simplified and more engineers become aware of the long range advantages of registration and learn how to go about it, the practice will become more widespread.

Your editors, in having me present my experience on this subject, have focused attention on the fact that engineering, as a profession, recognizes no limiting boundaries of any one branch of engineering. Engineers' registration offers the only practical method of achieving nationwide public recognition of engineering as a learned profession of high ethical and technological standards.

Registration laws regulating the practice of engineering have been enacted by all of our states, the District of Columbia and our remaining territorial possessions. Although only about 50 years have elapsed since the first engineering law was passed in Wyoming in 1907, there are close to 230,000 registrants on the lists of the 50 states and the territories. These laws establish the minimum qualifications of education and experience required of those who would practice or offer to practice professional engineering.

How does an individual engaged in engineering work go about getting his license? The trend toward uniformity of requirements, except for small differences due to state prerogative, eases the task of applying. The greatest effort will have to be made by those engineers of long established experience when writing up their record on the application form. Most



John D. Constance, P.E., Engineering Registration Consultant for 17 years, is a graduate chemical engineer who is registered in New York and New Jersey and holds a Certificate of Qualification, National Bureau of Engineering Registration. He is associated with refresher course work of ASME, AIEE, AICHE, ASCE.

engineers are too modest in reporting experience and lose much of the desired effect because of poor documentation.

Boards of Examiners have not been established for the purpose of imposing undue hardship on a candidate in his efforts to achieve professional status. Rather, the opposite is true. The boards are anxious to advance recognition of engineering and to enhance the prestige of the greatest possible number of those so qualified by encouraging such registration.

#### SEVEN REQUIREMENTS GENERALLY APPLY

Requirements for registration cannot be precisely defined because of the differences in the registration laws of the individual states and territories. However, engineers fall into any one of the categories shown in the table, "Classification of Applicants," on page 58. To make the point clearer, there are seven general requirements, the details of which may vary slightly from state to state:

1. **Age:** Minimum age is 25 for full license. For engineer-in-training (EIT), age is 21.
2. **Citizenship:** Certain states require U. S. citizenship, others do not.
3. **Graduation:** Applicant must hold a high school diploma or the approved equivalent.
4. **Degree:** An engineering degree from an accredited

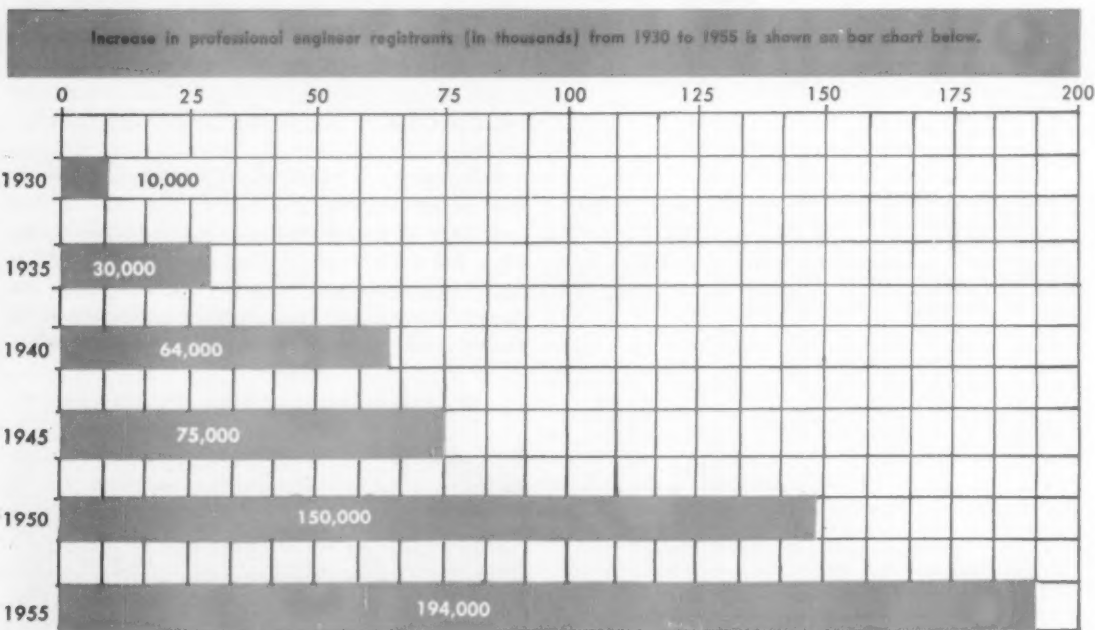
institution or the equivalent in practical engineering experience is necessary.

5. **Experience:** Evidence of sufficient qualifying experience as of date of application must be presented.
6. **Character:** Reference from professional engineers personally acquainted with the applicant and attesting to his integrity are needed.
7. **Examination:** Unless waived by the board of examiners, the candidate must pass all parts of the professional examination given by his state.

#### CHECK LIST HELPS DEFINE PROBLEM

Use the following check list as a primary guidepost to a better understanding of your particular problem. Check and test yourself.

- |   | YES | NO  |
|---|-----|-----|
| 1. Are you at least 25 years of age?  | ( ) | ( ) |
| 2. Are you a citizen or have you declared your intention of becoming one?               | ( ) | ( ) |
| 3. Have you a full high school education or the equivalent?                             | ( ) | ( ) |
| 4. Are you presently engaged in engineering work?                                       | ( ) | ( ) |
| 5. Do you have an engineering degree?   | ( ) | ( ) |
| 6. Years of experience in engineering.  | ( ) |     |
| 7. Are you in responsible charge of work or men?  | ( ) | ( ) |
| 8. Are you personally acquainted with at least three registered professional engineers? | ( ) | ( ) |



Source: National Society of Professional Engineers.

9. Do your responsibilities consist solely of repetitive operations, such as those of clip board data taker? ( ) ( )

This list can provide you with some interesting answers. For instance, item 5 can have a "no" and still qualify. Item 3 must be a "yes." Items 7 and 8 must be "yes"; 9 must be "no".

#### EXPERIENCE MUST BE OF BROAD SCOPE

Engineering experience must be of a grade and character satisfactory to the board. It is not the number of calendar years of experience but the nature of that experience that has the qualifying ingredient. To acquire the acceptable amount of experience requires more than a mere count of calendar years after graduation. This frequently proves to be a big disappointment to many men who are qualified in all other respects.

The National Council of State Boards of Engineering Examiners (NCSBEE) defines qualifying experience as "the legal number of minimum years of creative engineering work requiring the application of the engineering sciences to the investigation, planning, design and construction of engineering works. It is not merely the laying out of details of design, nor the mere performance of engineering calculations, writing specifications or making tests. It is rather a combination of these things plus the exercise of good judgment, taking into account economic and social factors, in arriving at decisions and giving advice to the client or employer, the soundness of which has been demonstrated in actual practice."

Acceptable engineering experience defies exact definition and, to some extent, is subject to the interpretation of the State Board of Examiners. However, it is predicated on a knowledge of engineering mathematics, physical and applied sciences, properties of materials and the fundamental principles of engineering design. A board will insist that an applicant's experience be broad in scope and of such nature as to have developed and matured the applicant's knowledge and judgment.

For the newly graduated engineer, some routine work is unavoidable and it may even be desirable. But to obtain the proper amount of experience he should seek the widest possible responsibility. Boards value experience of a broadly diversified character higher than more specialized activities. Boards license the engineer, not the specialist.

#### BOARDS RESTRICT EXPERIENCE CREDIT

All boards allow credit, subject to certain restrictions, for the engineering experience of the applicant.

They do not allow experience credit for such as:

1. Teaching of nonengineering subjects in an engineering college or elsewhere.
2. Work projects before applicant would normally complete high school or would reach the age of 18.
3. Assignments in branches of the armed forces which do not involve engineering.
4. The work periods of a cooperative college course.
5. Vacation periods between the terms of a college course.
6. Sales work which does not involve the use of engineering knowledge.
7. Employment of a nonengineering nature even though it may be in connection with engineering works.
8. The duties of a contractor, superintendent or foreman on construction work unless such work involves engineering practices.
9. Correspondence school courses in engineering.

A man may acquire his experience in his home state or elsewhere. A year of graduate study in engineering which has led to a masters degree may be accepted as one of the years of experience required after graduation. Higher degrees also are looked upon as comparable to years of acceptable experience.

#### COMPLETE EXPERIENCE RECORD IMPORTANT

All too frequently the question of what constitutes acceptable experience is given only a passing thought. As a result, this vital question is not answered; important information is not well documented in the application. Nevertheless, in evaluating a man's experience, the board must reach its decision by what the applicant has stated on the form; its members cannot read in between the lines and cannot go by mere hearsay. Therefore, the application is not the place for modesty—nor is it enough to list job titles, no matter how impressive.

The record must give the complete story and must describe the applicant's function in detail, leaving the board with no doubt as to the exact nature and value of the applicant's experience.

**Engineer-in-Training Certification** — Engineering graduates and nongraduates having less than the required number of years of approved experience to qualify for full licensure may qualify for the EIT examination (see "Classification of Applicants" table). Upon successful completion of the examination, the EIT is granted a certificate attesting to the completion of the theoretical requirements for registration. This is not, however, a certificate authorizing the practice of engineering.

# WRITTEN EXAMINATION GREATEST CHALLENGE

The written examination requires the expenditure of greatest effort for most candidates. Because it is the most convenient method of determining who will be licensed and who will not, it has been used since the beginning of the registration movement. For many years the various state boards have been making a concerted effort to create more uniformity in the types, quality and quantity of questions to be asked. Uniformity in the written examination, and in other requirements too, is essential to facilitate the free flow of engineering talent and services across state lines by permitting licensure by endorsement.

The written examination is a sampling process. It has to be in order to do the job effectively. This sampling process must afford good distribution and should be of a character to determine the ability to use the tools of the profession, instead of being a mere memory test.

**Types of Problems**—It is common practice among state boards to divide the written examination into

two parts, given on succeeding days. One part deals with the basic material to evaluate the candidate's knowledge of engineering fundamentals and one part (the second day) is designed to determine the candidate's ability to apply the basics and to determine the extent of his experience obtained in engineering office or on the job.

The first day's questions usually cover the basic subjects of mathematics, physical and applied sciences (statics, dynamics, fluid mechanics, thermodynamics, electrical principles and mechanical design). Some boards arrange examination questions to include mathematics in the working out of solutions to problems in engineering economics, hydraulics, machine design and other subjects to reveal his mathematical ability. In this way examination time is used more efficiently.

**Second Day's Questions**—Questions for the second day are intended to sample judgment in economic considerations and practical approaches. The problem wording and terminology are so arranged as to require the candidate to call upon practical experience to develop the solution.

## CLASSIFICATION OF APPLICANTS

Applicants Who Are . . .	And Have the Following Years of Approved Experience . . .	May Qualify for . . .
Graduates of accredited engineering schools.	Less than 4 years.	The preliminary or Engineer-in-Training written examination and EIT Certification.
	4 or more but less than 15 years.	The complete written examination and full P.E. Licensure.
	15 or more years.	Licensure by Endorsement, without written examination (if special requirements set by the individual state board are satisfied).
Graduates of other engineering schools.	Same as above, plus added approved time as determined solely by the individual State Board of Examiners.	Same as above, all items.
High school graduates with no engineering education.	8 years minimum. 12 years minimum. 25 years minimum.	Same as above, EIT. Same as above, P.E. Same as above, Endorsement.
High school graduates with partial educational credit from an accredited engineering school.	Same as above, less approved time for educational credit as determined solely by the individual state board of examiners.	Same as above, all items.

Source: "Are You Ready for Professional Registration?" by John D. Constance, P. E., *Chemical Engineering* (McGraw-Hill), August, 1955.



The trend today is toward more questions of the essay type—or the questions may involve a critical description of a project in which the candidate has had some experience. This will help in evaluating his grasp of engineering principles more than any number of academic problems could ever do.

Since the examination is given to men with minimum qualifications for registration, the questions represent the core of material.

#### LICENSURE BY ENDORSEMENT NOT COMMON

Licensure by endorsement (without written examination) is the cherished ambition of all engineers but this special consideration befalls only a very few who are able to meet the severe requirements set by the board. Boards have been keenly aware of the position of mature engineers with long established practice and recognized standing. Many boards are now providing ways and means for these men to acquire registration without written examination.

The mere showing of calendar years of experience is insufficient to qualify an applicant for exemption, however. The qualification, "recognized standing," is something which cannot be precisely defined but boards have adopted criteria to evaluate professional standing. The rules cover these requirements to some extent but it is solely within the discretionary powers of the Boards of Examiners after carefully weighing the experience record and references produced by the applicant. Years of eminent practice or outstanding achievement weigh heavily in the applicant's favor. In addition, advanced studies, higher degrees, technical society activities, contributions to engineering knowledge and progress, inventions and patents, technical publications, high regard by fellow engineers, important developments and achievements and prior registration in another state are among the criteria used by the boards.

Before an applicant can consider himself so qualified for licensure by endorsement he must show, in most states, at least 15 years of approved engineering experience and practice after graduation from an accredited school of engineering. Nongraduates also may be considered but board requirements are even more rigid (see "Classification of Applicants" table).

#### PREPARING FOR THE WRITTEN EXAMINATION

Passing the written examination is generally the biggest stumbling block for the aspiring candidate. If you have the experience and the professional know-how, your State Registration Board *wants* you to have a PE license. It isn't the board's job to throw roadblocks into your path. Actually, the opposite is true.

Yet your board's first responsibility is to the public—to keep unqualified men from assuming responsibility for the design and construction of projects that involve health, life and safety. And it relies, in part, on the written examination to do the job.

The written examination need not be a stumbling block. Younger men seem to find the examinations easier than older, more mature candidates. And the state boards appreciate this. They presently are studying ways and means of giving a different type of examination to the older group. While such new tests would not be easier, they would give the older man an opportunity to show his ability to exercise mature judgment.

What are the objectives of the examination? Here's what your state board wants to know when you sit for it: 1) For the EIT or first day's examination, whether or not you understand basic engineering principles. 2) For the second day's examination, if your training and experience have taught you how to apply these principles to practical engineering problems.

Naturally, the test can't cover every detail of your engineering know-how. Since the examination must be a sampling process, you're likely to find enough questions that are right up your alley.

Although engineering college courses differ in some details, there is a core of common material. Such material is shown in the chart, "Common Material for First Day's Exam," on page 63.

Examination questions in safety engineering, when presented by boards, can be best exemplified by the following:

1. A manufacturing plant averages 2,000 employees on a 50 hour work week. In one year it experiences 25 disabling injuries for a total of 2,000 lost days.
  - a. What is the plant accident frequency?
  - b. What is the plant accident severity?
  - c. Would you consider this a satisfactory record if the plant were a textile manufacturing plant? If it were in the paper and pulp industry? Why?
  - d. Why is it usually considered undesirable to include first aid cases in the calculation of an accident frequency index?
2. Would you approve or condemn the following practices and why?
  - a. Striking a cold chisel with a claw hammer.
  - b. Striking a carpenter's chisel with a claw hammer.
  - c. Using a pipe extension on a wrench to secure more leverage.
  - d. Using a file to pry open a metal container.
3. Design a balcony of timber construction to be located in a small side bay of a plant for the

storage of 1,000 cubic feet of baled cotton goods. The location is such that existing walls will be used to support the back and two ends of the balcony. The balcony is to be 20 feet long and 10 feet wide at 10 feet above the main floor.

4. A line of abrasive wheels is exhausted from the same suction duct which runs along the back of the machines to a fan at one end of the duct. In order to have the same suction head at each machine, what variation is necessary in the duct size? What arrangement would you suggest for collecting and exhausting fumes which are heavier than air?
5. a. What is the principal eye hazard in electric welding operations and how is this hazard controlled in the case of the welder? In the cases of other employees in the vicinity?
- b. Is the use of oil or grease recommended in the maintenance of oxy-acetylene torches? Why?
- c. Describe the storage of full acetylene and oxygen cylinders.

This is the material usually covered during the first day's examination.

A glance at the chart ("Common Material for First Day's Exam") points up the basic importance of mathematics. Understanding the physical sciences depends on the solid foundation of mathematics. Examiners, recognizing the importance of this tool, commonly ask for mathematical solutions of physical problems.

Boards aren't interested in asking questions which call for extremely long answers. Usually, a question is supposed to take from 20 to 30 minutes. Some should take even less time. Most examiners give equal weight to all questions, thus discouraging long answers.

What are board practices in conducting examinations? Some boards use the open book test; others use closed book. Open book measures your ability to recognize and correctly apply engineering principles. Also, some examiners include a limited number of closed book questions, especially when such questions include definitions that easily could be copied from a book.

When preparing for the written examination an early start is important. Your state board secretary (see list at end of article) can tell you where to get information on enrolling in refresher courses. He also will tell you where to get copies of past examinations. If you've had many years of experience, it may pay you to check into the possibilities of getting a waiver of a portion of the written examination. Success in this area depends, in part, on how care-

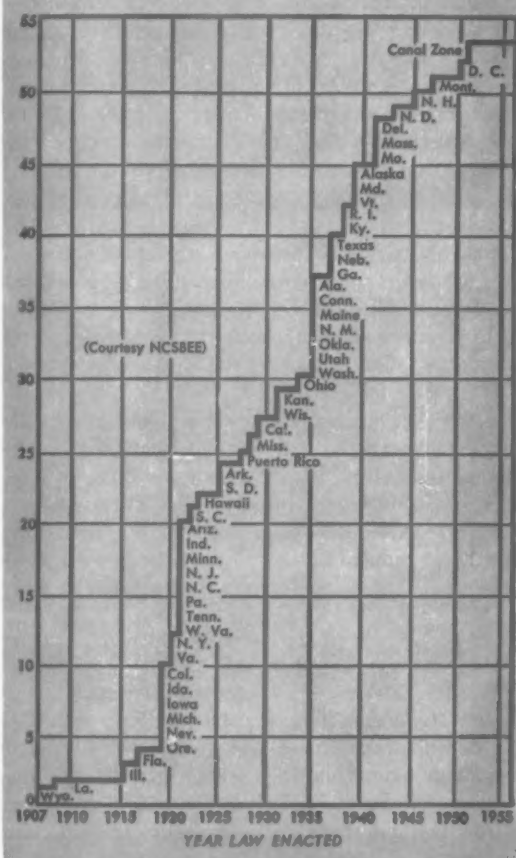
fully you prepare your experience record. Here you may need help.

If attending refresher courses is inconvenient, look into the matter of specially prepared texts aimed at preparing you for the examination. Avoid "cook book" style preparation. If you simply work out problems without getting a good understanding of fundamentals, you are likely to trap yourself into a feeling of hollow security.

Look over past examinations and you will see that the core of the material they cover remains pretty much the same from year to year. But the boards leave the "cook book" engineer high and dry by giving the newer examination problems a different slant. So there is no easy substitute for careful preparation.

Examiners bar textbooks from closed book examinations. For open book tests you will be allowed to

Progressive history of engineer registration in the United States from 1907 to 1955 is illustrated graphically, with vertical scale showing numbers of states and territories having registration laws.



use reference books, text books, personal note books and other material that may help. Texts used in college or in other courses are first rate sources of information. Also, compilations of past examinations can reveal much useful data. Past examinations will familiarize you with the wording of problems and with the technical areas the boards generally cover. Most important, you will build up your confidence.

#### SITTING FOR THE EXAMINATION

Besides knowing your field of engineering "cold," you should master the art of taking the PE examination. Here are some pointers:

1. Get a good night's rest before the examination.
2. Get to the examination room early. Don't rush.
3. Sit in a well lighted area of the room.
4. Be sure to read all directions carefully.
5. Write neatly—usually writing in ink is required.
6. Write on one side of the paper only.
7. Work out no more than one solution on any one sheet of paper.
8. Draw a diagram to help explain each solution.
9. Do the easiest problem first. It will build confidence.
10. Allow yourself equal time for each problem.
11. Don't linger over problems you cannot answer.

Read through the entire examination before attempting to answer any of the questions. As you read, check the problems with which you are most familiar. The first reading will take you no more than 10 to 15 minutes. And you will find it's time well spent. Then divide your time equally among the problems you choose to answer. When the time you have allotted to a problem runs out, go on to the next one—even if you're not finished. *Remember:* Examiners give you a large part of the credit for simply setting up the problem and showing an understanding of what is wanted. So it is not smart to spend a great deal of time trying to get refined answers at the expense of completely ignoring another problem that you could answer with relative ease.

By taking the easiest problems first, you will build up confidence and ease off tension.

A common complaint of candidates (post mortems): "I couldn't remember the simplest formula in the examination room. But now that it's over I could wade through these problems with flying colors." This candidate was prepared but he could not respond. Why? He had suffered emotional block. You can avoid this pitfall simply by relaxing. If you feel tension mounting during the examination, ask permission to leave your desk for a break. But remember: *The best defense against emotional block is careful preparation.*

**What To Take into the Examination**—You will get detailed instructions from your state board on this score. The board generally will require some form of identification or admission card. In addition, these items will come in handy: wrist watch, fountain pen and ink, pencils, slide rule, log tables, cross-section paper, scratch paper, ruler, scale, triangles, protractor, reference books (if permitted).

#### ACCREDITING OF ENGINEERING SCHOOLS

Some boards accept engineering schools accredited by the Engineers' Council for Professional Development. Others have compiled their own lists from independent investigation. If a school is on the accredited list, it does not necessarily follow that all its engineering courses are similarly approved. In any event, if the applicant's school or course pursued does not appear on the official accredited list, he is advised to write to his board for confirmation. Further, the applicant may be required to write to his school registrar, asking the school to formulate plans toward ultimate accredited standing with the board.

#### STATES AUTHORIZE ENGINEERS' SEAL

All states and territorial possessions authorize or require professional engineers to have a personal seal or stamp, and prescribe the requirements and limitations of its use.

The seal serves a double purpose; it identifies the practitioner whose name and number it bears and it indicates that he has obtained state authorization to engage in professional practice. In the first instance, it establishes responsibility for the work with which it is connected and, in the second, it stands as a hallmark of an acceptable degree of professional competence.

#### STEP-BY-STEP PROCEDURE TO FOLLOW

The step-by-step procedure for becoming a registered professional engineer is as follows:

1. Write the secretary of your State Board of Examiners for application forms and a copy of the state registration law.
2. Check the requirements listed in the law.
3. Fill in the necessary forms and obtain the required references.
4. Return the application and other papers with the statutory fee.
5. Await the board's action.
6. Follow the board's instructions. It is most likely you will be directed to take the written examination unless you qualify for licensure by endorsement. Some boards request interviews for borderline cases.

7. Await the results of the written examination or interview. Notification time varies from state to state.

**Study Helps**—The applicant should first determine if he is qualified for either the written examination or licensure by endorsement before exploring the matter of refresher courses, tutoring or home study preparation. A good knowledge of filing procedure will be helpful, with the board having the final say.

The state board secretary is in the best position to furnish the candidate with a list of references and study helps, together with places where refresher courses are available. The National Society of Professional Engineers and its state and local chapters always are most helpful in making this information known. A number of industrial organizations are providing their qualified engineers with refresher courses. For the older, more mature men, they furnish guidance procedures for exploring the possibility of licensure by endorsement.

**HOW TO CONTACT YOUR STATE BOARD  
OF ENGINEERING EXAMINERS**

**ALABAMA**

State Board of Registration for Professional Engineers and Land Surveyors, Clifton C. Cobb, Executive Secretary, 64 N. Union St., Montgomery 4.

**ALASKA**

Board of Engineers and Architects Examiners, R. V. Killewich, Secretary, Box 1416, Juneau.

**ARIZONA**

State Board of Technical Registration, Mrs. Rayma Neeb, Executive Secretary, Room 403, 128 N. First Ave., Phoenix.

**ARKANSAS**

State Board of Registration for Professional Engi-

neers, B. Allan Curry, Secretary, P. O. Box 1117, Park Hill Station, North Little Rock.

**CALIFORNIA**

State Board of Registration for Civil and Professional Engineers, Arthur I. Flaherty, Executive Secretary, 529 Business and Professions Bldg., 1020 N. St., Sacramento 14.

**CANAL ZONE**

Board of Registration for Architects and Professional Engineers, Gerald A. Doyle, Jr., Secretary, P. O. Box 223, Balboa Heights.

**COLORADO**

State Board of Registration for Professional Engineers, James S. Findley, Assistant Secretary, Room 220, Majestic Bldg., Denver 2.

**CONNECTICUT**

State Board of Registration for Professional Engineers and Land Surveyors, Charles H. Coogan, Jr., Secretary, 30 Oak St., Hartford 6.

**DELAWARE**

State Board of Registration for Professional Engineers and Land Surveyors, Frank T. Lynch, Secretary, 11 E. 12th St., Wilmington 1.

**DISTRICT OF COLUMBIA**

Board of Registration for Professional Engineers, Mrs. Lacey W. Coad, Executive Secretary, 1740 Massachusetts Ave., N.W., Washington 6.

**FLORIDA**

State Board of Engineer Examiners, Mrs. Ann P. Clover, Executive Secretary, 408 John F. Seagle Bldg., Gainesville.

**GEORGIA**

State Board of Registration for Professional Engineers and Land Surveyors, Cecil L. Clifton, Joint Secretary, 224 State Capitol, Atlanta.

**HAWAII**

Board of Registration for Professional Engineers, Architects and Land Surveyors, William C. Furer, Executive Secretary, 1909 Aleo Place, Honolulu 14.

**IDaho**

State Board of Engineering Examiners, Orland C. Mayer, Secretary, Idaho Power Company Bldg., Boise.

Contributions to the technical literature and technical publications rate high as evidence of "recognized standing" which may qualify applicant for licensure by endorsement.





**ILLINOIS**

Professional Engineers' Examining Committee, Fredric B. Selke, Superintendent of Registration, Room 109, Capitol Bldg., Springfield.

**INDIANA**

State Board of Registration for Professional Engineers and Land Surveyors, Ferdinand Jehle, Secretary, 145 W. Washington St., Room 502, Indianapolis 4.

**IOWA**

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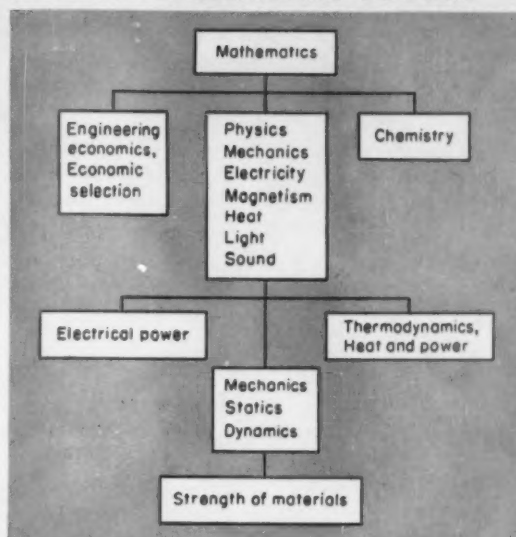
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7. Await the results of the written examination or interview. Notification time varies from state to state.

**Study Helps**—The applicant should first determine if he is qualified for either the written examination or licensure by endorsement before exploring the matter of refresher courses, tutoring or home study preparation. A good knowledge of filing procedure will be helpful, with the board having the final say.

The state board secretary is in the best position to furnish the candidate with a list of references and study helps, together with places where refresher courses are available. The National Society of Professional Engineers and its state and local chapters always are most helpful in making this information known. A number of industrial organizations are providing their qualified engineers with refresher courses. For the older, more mature men, they furnish guidance procedures for exploring the possibility of licensure by endorsement.

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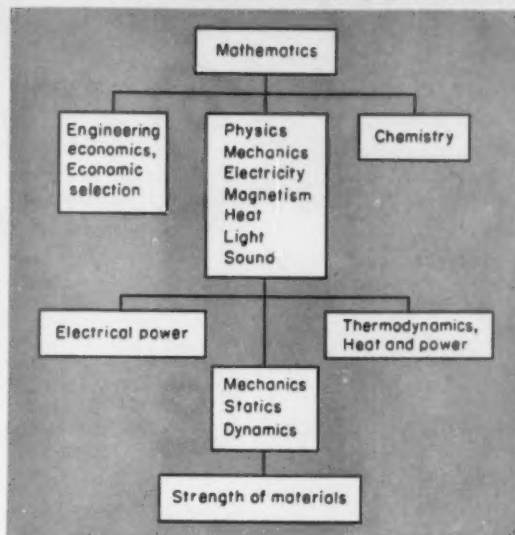
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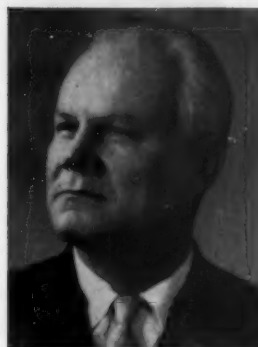
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### Rules

*Safety*. 1959. 24 pp. Industrial Relations Dept., Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3.

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### Accidents

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"Fire-Resistant Hydraulic Fluids." Richard Davis. *Quarterly of the National Fire Protection Association*. July 1959. pp. 44-49.

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"Safety Must Start at the Top." Arthur Hickey and Winston Patterson. *Modern Sanitation and Building Maintenance*. August 1959. pp. 20, 52, 53.

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"Carriage Travel Reduced: Through Relocation of Sawyer from Beside Saw to Feed Side of Deck Improved Safety and Visibility Results." *The Lumberman*. September 1959. p. 64.

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*National Safety News*, November, 1959



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the Woodlands Division of Georgia Kraft Company." Erle T. Newsome, Jr. *Southern Pulp and Paper Manufacturer*, Sept. 10, 1959. pp. 72, 75.

### Marine Industry

"Safety on the Nuclear Ship Savannah." Richard P. Godwin, Preston P. Eddy and Ralph K. Longaker. *Public Health Reports*, August 1959. pp. 669-673.

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"Is Industry Being Overburdened with Safety Regulations?" *The Plant*, September 1959. p. 61.

### Radiation

"Administrative Experience with Occupational Overexposure to Radiation." Morris Kleinfeld, and A. P. Abrahams. *Industrial Hygiene Journal*, August 1959. pp. 294-298.

### ADDRESSES OF MAGAZINES MENTIONED

Readers are asked to send their requests for copies of magazine articles to the publishers. The NSC Library is unable to fill such orders.

The American Journal of Nursing, 2 Park Ave., New York 16.

The American Pressman, International Printing Pressmen and Assistant's Union of North America, Pressmen's Home, Tenn.

Aviation Week, 330 W. 42nd St., New York 36.

Business/Commercial Aviation, 205 E. 42nd St., New York 17.

Construction Methods and Equipment, 330 W. 42nd St., New York 36.

The Edison Electric Institute Bulletin, 750 Third Ave., New York 17.

Fire Engineering, 305 E. 45th St., New York 17.

Industrial Hygiene Journal, American Industrial Hygiene Association, 1014 Broadway, Cincinnati 2, Ohio.

Industrial Hygiene News Report, 1791 W. Howard St., Chicago 26.

The Inland and American Printer Lithographer, 79 W. Monroe, Chicago 3.

Journal of Occupational Medicine, Industrial Medical Association, 28 E. Jackson Blvd., Chicago 4.

Journal of the American Medical Association, 535 N. Dearborn, Chicago 10.

Loss Control, American Mutual Liability Insurance Co., Wakefield, Mass.

The Lumberman, Miller Freeman, 71 Columbia St., Seattle 4, Wash.

Mechanical Contractor, Suite 570, 45 Rockefeller Plaza, New York 20.

Modern Plastics, 575 Madison Ave., New York 22.

Modern Sanitation and Building Maintenance, Powell Magazines, Inc., Easton, Pa.

Occupational Safety & Health, International Labour Office, Geneva, Switzerland.

Petroleum Week, 330 W. 42nd St., New York 36.


The Plant, Plant Publishing Co., St. Joseph, Mich.

Public Health Reports, Public Health Service, Washington 25, D. C.

Quarterly, National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Sentinel, Factory Insurance Association, 85 Woodland St., Hartford 2, Conn.

Southern Pulp and Paper Manufacturer, E. H. Abernethy Publishing Co., 75 Third St., N. W., Atlanta, Ga.



## One slip can cost more than Multigrip...

What percentage of occupational accidents is caused by falls? In one state, falls were responsible for 17 per cent of all injuries, 33 per cent of the days lost and 23 per cent of the direct cost. (From National Safety News, February, 1959.) Falls ranked No. 1 as the cause of most accidents.

Fortunately, you can do something to prevent falls by installing USS Multigrip. Multigrip floor plate provides safe traction in any direction. It is studded with little cleats that are flat

on top and do not catch the shoe.

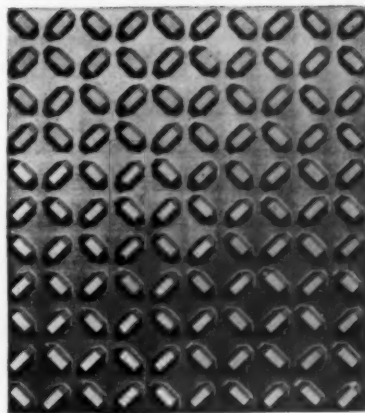
For dangerous locations such as machine shops, loading platforms, stair treads and catwalks, USS Multigrip supplies safety plus.

*Saves money, too!* Where floors take a pounding from heavy traffic, Multigrip will stand for years under constant use. There's little or no maintenance.

On your next inspection trip, search out the hazardous locations—and make them safe with USS Multigrip.

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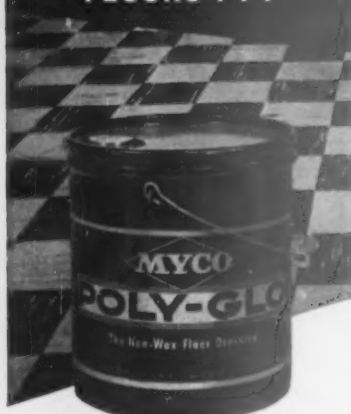
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### —From page 79

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Cecil B. Dodd, Manager, Industrial Relations, Weirton Steel Company, Weirton, W. Va.

Miss Dorothy Downs, Assistant to Director of Engineering, Firemen's Mutual Insurance Co., Providence, R. I.

T. A. Drescher, Milk Industry Foundation, c/o Borden's Farm Products Division of the Borden Co., New York.

Dan Dugan, President, Dan Dugan Oil & Transport Co., Sioux Falls, S. D.

H. B. Duffus, Administrator Accident Prevention, Westinghouse Electric Corp., Pittsburgh, Pa.

E. F. du Pont, Director, Employee Relations Department, E. I. du Pont de Nemours & Co., Wilmington, Del.

Dr. J. Duke Elkow, Professor, Department of Health and Physical Education, Brooklyn College, Brooklyn, N. Y.

Charles Ferguson, Director, Safety Division, United Mine Workers of America, Washington, D.C.

Charles W. Ferguson, Senior Editor, The Reader's Digest, Pleasantville, N. Y.

R. H. Ferguson, Assistant Director, Industrial Relations, Republic Steel Corp., Cleveland, Ohio.

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Radiation rays penetrate interior of castings, prove structural soundness at Chapman Valve Manufacturing Company. Art Dunn (left), Employers Mutuals Safety Engineer and Victor Bissonnette, Chapman Quality Control Director, watch technicians prepare setup.

INDUSTRY FACES NEW SAFETY PROBLEMS  
WHEN THE "CIVILIAN ATOM" IS PUT TO WORK...

# Wausau Story

by **WILLIAM UBER**  
Radiation Specialist  
for Employers Mutuals  
of Wausau



"You've read that nuclear power now propels ships, produces electric power. And an estimated 1,600 companies are authorized to use radioisotopes for everything from measuring the thickness of paper to tagging different kinds of petroleum pumped through the same pipeline.

"Chapman Valve Manufacturing Company at Indian Orchard, Massachusetts, pioneered in using radioisotopes as part of their quality control program. Valves they cast might have openings up to ten feet, weigh as much as 3500 pounds. To test the casting without repositioning the big and heavy valve, a gamma source is placed in the center of the valve and a film is strapped around the outside. The full picture is taken all at one time.

"Then too, industries use nuclear energy for research. The Admiral Corporation in Chicago, another Em-

ployers Mutuals policyholder, studies the effects of radiation on electronic equipment. The parts to be studied are put into an irradiation chamber containing Cobalt 60. A project engineer watches the work through a 42 inch lead glass window...arranges the parts, even makes delicate connections with remote control manipulators. Chamber walls are 41 inches of magnetite ore, providing shielding equal to 7 feet of ordinary concrete.

"Guarding the safety of the men where radioactive materials are used requires special knowledge, special techniques, special instruments. The overall programs involve medical and monitoring procedures as well as mechanical protection. Employers Mutuals safety men work closely with the policyholders' health physicists and supervisors, exchange information and help watch all the details with the care radiation hazards demand.

"Sum it up by saying Employers Mutuals' chief concern is safety—reducing hazards and reducing accidents. In the field of radioactive materials, we serve progressive industry in the traditional 'Wausau Way'."



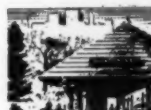
Radiation chambers at the Admiral Corporation Laboratory are surveyed by a health physicist after tests are completed. Facilities and procedures at this laboratory are models for radiological research and safety.

.....

One way Employers Mutuals keeps pace with progressive industry is to provide specialists like Mr. Uber. In all fields, qualified men work with our policyholders to help solve their problems.

Employers Mutuals of Wausau has offices all across the country. We write all forms of fire, group and casualty insurance (including automobile). We are one of the largest in the field of workmen's compensation. Consult your telephone directory for your nearest Wausau Man or write us in Wausau, Wis.

## Employers Mutuals of Wausau



"Good people to do  
business with"

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**OVER 15 GRINDING WHEEL  
MANUFACTURERS ARE  
NOW PROVIDING  
CARROLL'S  
SAFETY-GUARD  
INSERTS IN THEIR WHEELS**

☐ This new Safety-Guard Insert with its integrated, revolving guard gives you built-in top performance and test results show the safety factor is increased up to 75%.

☐ The Carroll Safety-Guard Insert meets all requirements of a cup wheel guard as specified by the ASA Safety Code.

☐ Specify, order and try this Carroll Safety-Guard Insert on your snagging wheels and be convinced yourself of its safety-first performance.

Insist on safety-first with Carroll Safety-Guard Insert.



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G. C. Stewart, Executive Vice-President, National Safety Council, Chicago.

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Arthur E. Stoddard, President, Union Pacific Railroad Co., Omaha, Nebr.

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B. D. Tallamy, Federal Highway Administrator, Bureau of Public Roads, Washington, D. C.

Rabbi Marc H. Tanenbaum, Executive Director, Synagogue Council of America, New York.

James H. Taylor, Vice-President, Industrial Relations Counselors Service, Inc., New York.

Col. W. L. Tubbs, Assistant for Ground



Edwin Felch, project director in charge of developing the Titan guidance system, holds the "voice" of the ICBM.

# V VOICE OF A GUIDED MISSILE

This is a missile-borne transmitter. It is the "voice" of a missile in flight . . . part of a new radio-inertial guidance system developed by Bell Telephone Laboratories for the Ballistic Missile Division of the Air Force.

This versatile system helped deliver the nose cone of a Thor-Able test missile precisely to its South Atlantic target area—5000 miles from Cape Canaveral, Florida. So accurately was the nose cone placed that a waiting group of ships and planes retrieved it in a matter of hours. It was the first nose cone ever to be recovered after so long a flight.

The command guidance system which made such accuracy possible combines precision tracking radar with a special Remington Rand Univac computer. Fed a steady stream of signals from the missile-borne transmitter, the ground-based equipment compares the missile's flight path with the preselected path. Corrective steering orders are computed and transmitted automatically to the missile. The ground

station monitors the progress of the flight continuously and obtains immediate evaluation of mission success. And since the principal control equipment is kept on the ground, expendable hardware in the missile itself is minimized.

This radio-inertial guidance system is a product of the Bell System's development-production team: Bell Laboratories and Western Electric. It is in production at Western Electric for the first operational squadrons of the Titan intercontinental ballistic missile.

Bell Labs scientists and engineers developed the world's most versatile telephone network and much of our nation's radar. They have constantly pioneered in missile systems. From their storehouse of knowledge and experience comes this new achievement in missile guidance.

**BELL TELEPHONE SYSTEM**



# A FEW DOLLARS IN AMPCO® SAFETY TOOLS

## MIGHT HAVE PREVENTED THIS!

What if fire or explosion hit your plant tomorrow? Think of the damage that could be done—the lives and the time that could be lost! Unless you have money to burn, it's simply too expensive to gamble on going without the low-cost protection of Ampco Safety Tools in hazardous areas.

Factory Mutual Laboratories approve Ampco Safety Tools for use in many locations where a hot spark could mean paralyzing disaster.

Ampco has the world's most complete line of safety tools — more than 400 types and sizes — including the Ampco All-Purpose Bung Wrench (shown below) which fits 20 different closures.

Catalog ST-10 tells which Ampco Safety Tools to choose for your particular requirements. Write for free copy today.



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Safety, Hq., U. S. Air Force, Washington, D. C.

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Mrs. Bernice T. Van der Vries, Member, Chicago Transit Board, Chicago Transit Authority.

Donald G. Vaughan, Secretary, Safety Engineering Department, The Aetna Casualty and Surety Co., Hartford, Conn.

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Miss Mary Weeks, Program Specialist, Health & Safety Education, Girl Scouts of the United States of America, New York.

Dr. George M. Wheatley, Third Vice-President, Metropolitan Life Insurance Company, New York.

T. H. Wilkenson, Director of Safety, Department of the Army, Washington, D. C.

Robert S. Wilson, Hudson, Ohio.

W. O. Wilson, Manager of Safety, Standard Oil Co., (Ind.), Chicago.

W. B. Wood, Director, Cooperative Extension Work, College of Agriculture, Ohio State University, Columbus, Ohio.

E. Clark Woodward, Director of Safety, A. O. Smith Corp., Milwaukee, Wis.

J. C. Wright, State Superintendent of Public Instruction, Des Moines, Iowa.

Dr. William P. Yant, Director of Research, Mine Safety Appliances Co., Pittsburgh, Pa.

Dr. D. Willard Zahn, Dean, Teachers College, Temple University, Philadelphia, Pa.

Carroll F. Zapp, Vice-President and Secretary, Morrison-Knudsen Co., Boise, Idaho.

Carlton L. Zink, Product Research Department, Deere & Co., Moline, Ill.

## Global Construction—

—From page 19

I remember in 1940 when we went into an undeveloped section of Samoa to build an airstrip for the U. S. Navy. There was literally nothing there except native tribes who lived happily on fishing and raising taro and a few other vegetables and fruit. A tribe consisted of a native village of about 200 men and women and a chief. We went from village to village, arranging with the chief to allocate some of his men to us, and after visiting about 10 villages, we assembled a force of about 200 natives for the job.

Clocks were unknown to these people, and each village had a crude sun dial which regulated their work hours. When the shadow reached a certain point, they started work. When it reached another point, they quit for the day.

This was fine, except that between summer and winter there was almost a two-hour difference in the work day. Having a job to do and

—To page 127



## Wire from Washington

—From page 17

Labor issued a report on work-injury rates for 1958 for contract construction. The over-all rate of 30.9 disabling injuries per million employee-hours worked in 1958 compared with 30.7 for 1957 and 31.2 for 1956.

Rates for these three years were the lowest recorded by the bureau since the 1943-45 period. However, in the heavy construction sub-classification (other than highway and street) there was a rise from 26.6 to 28.5.

**Labor.** The AFL-CIO Annual Convention approved establishment of a trade union safety movement, through the AFL-CIO Standing Committee on Safety and Occupational Health. The resolution also provided for an annual AFL-CIO conference on safety and occupational health, to be dedicated to the principle of labor-management cooperation in safeguarding life and limb.

All unions were urged to seek safety and health clauses in their contracts. Legislation establishing federal safety standards was approved, with grants to states to finance their administration.

**Aviation Safety.** The Federal Aviation Agency announced that nine centers for en route air traffic control would be set up at U. S. Air Force super combat centers. These centers are to assure increased safety for high-altitude civilian and military jet planes.

FAA also disclosed plans for a unified air traffic control system, whereby it would take over most of the air traffic control and air navigation functions now performed by the military services. The change is justified to provide "a greater assurance of safety in the jet age."

FAA anticipates that by 1966 some 80 million domestic revenue passengers will be flying with scheduled airlines of the United States. This would be almost a 600 per cent increase over the 1946 total of 12 million such passengers. In 1958, according to FAA, there were 25 billion intercity passenger miles on airlines, compared to 18

# LESS LINER! MORE GLOVE!



Photomicrograph of a cross section of a typical North PVC glove. Notice the extra-thick coating. That's where the wear is!

## That's why North PVC gloves by Jomac give longer service... better protection!

When you compare gloves, remember this: we use a special light-weight knitted liner and *extra coating*. Some manufacturers use heavy cotton flannel liners and *less coating*. Although total weights may be the same, you get a better value with North PVC gloves, because you're paying for gloves... not liners! The wear, after all, is in the coating.

And that isn't all! We offer a better selection of sizes... and that means greater comfort, greater dexterity, greater productivity for every worker on every job.

**FREE OFFER!** On your business letterhead, send us complete details of your working conditions, and we will send you a sample pair. Do it today!

### JOMAC INDUSTRIAL GLOVES

Jomac Incorporated, Dept. D, Philadelphia 38, Pa.

Plants in Philadelphia, Pa., and Warsaw, Ind.

In Canada: Safety Supply Company, Toronto

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Circle Item No. 52—Reader Service Card



## ACCO X-WELD ACID PICKLE CHAIN

**A New Alloy Chain Specially Made to Withstand  
the Heat and Corrosion of Acid Pickling**

This new chain resists the destructive effects of both heat and corrosion in normal sulphuric acid pickling operations. It can be used successfully in concentrations of Sulphuric Acid up to 20%, and at temperatures up to 200°F. Made in Acco's famed X-Weld design, this new chain has welds that are as strong or stronger than the chain itself.

Under comparison tests, Acco X-Weld Acid Pickle Chain has proved equal or superior to higher priced non-ferrous chain. In addition, the high alloy content makes it suitable for use in annealing furnaces at temperatures up to 1700°F. without scaling or without losing its acid-resistant properties. When subjected to elevated temperatures, full Working Load Limit of Acco Pickle Chain is restored when chain is returned to room temperature.

Acco X-Weld Pickle Chain is available now in five sizes ( $\frac{3}{32}$ " to  $\frac{3}{4}$ " for assembly in Acco Registered Sling Chains. For information, write our York, Pa., office for Bulletin DH-169.

## ACCO Registered SLING CHAINS

American Chain Division • American Chain & Cable Company, Inc.

Bridgeport, Conn. • Factories: York and Braddock, Pa.

Sales Offices: \*Atlanta, Boston, \*Chicago, \*Denver, Detroit, \*Houston,  
\*Los Angeles, New York, Philadelphia, Pittsburgh, \*Portland, Ore., \*San Francisco  
\*Indicates Warehouse Stocks



Circle Item No. 53—Reader Service Card

billion for rails and 15 billion for buses.

FAA amended its regulations to make its requirements uniform on frequency of pilot-proficiency checks.

Controversy continued on FAA's proposal to establish a maximum 60-year age limit for airline pilots. (See "Wire," August 1959.) The Air Transport Association announced support of the 60-year limit, but opposed another FAA proposal to place a 55-year limit on pilots commanding jet airliners.

**Motor Transportation.** Prior to adjournment of Congress, H. R. 9177 (Halpern) was introduced. The bill would authorize the Interstate Commerce Commission to encourage state adoption of laws in conformity with the Uniform Vehicle Code, and in furtherance of this purpose to consult and cooperate with state agencies and officials in the highway safety field and to provide requested technical advice and assistance.

The ICC amended its Motor Carrier Safety Regulations to authorize a class of employees, rather than specific employees. This would enforce the "out-of-service" provisions relating to motor vehicles for the transportation of migrant workers, where the mechanical condition of the vehicle makes it a possible accident or breakdown threat.

**Marine Safety.** The President vetoed H. R. 8728, which would have deferred for one year, until April 1, 1961, the date of required compliance with federal registrations under the Federal Boating Act of 1958. (See "Wire," October 1959.) The reason given by the President was that the deferral was not necessary, since Congress appropriated funds for enforcement of the requirement.

The Secretary of Labor issued a notice of hearings on proposed regulations applicable to employment and places of employment in the longshoring industry, as authorized in recent amendments of the Longshoremen's and Harbor Workers' Compensation Act. (See "Wire," October 1958 and September 1959.)

Among subjects and issues in-

volved are gangway specifications, safe rigging, safe walkways, overloading of gear, safe working loads, general safe working conditions, and personal protective equipment. Hearings were held in four cities in various parts of the country.

In preparation for an international conference schedule for London in 1960 to review the 1948 Convention for the Safety of Life at Sea, the Coast Guard has convened a group composed of interested federal agencies, shipping and allied industries, and labor unions.

Five principal committees have been set up to deal with construction, lifesaving, radio, safety of navigation, and nuclear power. (In addition, a load line committee was set up for 1961 consideration of revision of the 1930 Load Lines Convention.)

The composite report of the five committees has been circulated to the more than 50 nations which will be represented at the 1960 conference.

Major proposals to be advocated by the United States concern construction based on the concept that safety is related to the ability to survive damage; fire protection furthered by fire-resistant construction; approval of inflatable life rafts; life preservers and life buoys of a high-visibility color; a definite time specified for fire and boat drills; mandatory installation of a radiotelephone automatic alarm system to respond to distress signals; increased standards for radio watch-standing requirements; recognition of radar and required radar training; improved compliance with navigational light ranges; modification of steering and sailing rules relative to vessels crossing each other; greater uniformity in safe loading of bulk cargoes; more accurate definition of "dangerous goods"; required comprehensive safety evaluation report for each nuclear vessel; and control of nuclear vessels by the government at ports to determine whether safety requirements are being maintained.

**Bore:** Someone who insists on telling you all about his troubles when you want to tell him about yours.



## Try this...with any sling other than a Cable-Laid!

• You would soon discover that even a smaller sling has nowhere near the flexibility, resistance to kinking and freedom from crankiness that this two-inch ACCO Registered Cable-Laid Sling exhibits. While we do not recommend that you use Cable-Laid Slings like this, we do urge that you use these versatile slings for any lifting application where ease of handling is all-important.

The secret of ACCO Cable-Laid Slings lies in the construction of the wire rope—a combination of six individual wire ropes, not strands, laid around a special steel center. For this reason, Cable-Laid Slings won't kink—even when used on heavy loads with square corners.

ACCO Cable-Laid Slings are clean and bright because they're Galacco coated. Patented DUALOC endings also double-lock sling ends for double security.

And, of course, ACCO Cable-Laid Slings are Registered Slings. This is your assurance that each sling is proof-tested at twice its rated load-carrying capacity. Then, and only then, does it merit the ACCO tag and certificate of registration.

Ask your nearby distributor about Cable-Laid—or write us at Wilkes-Barre, Pa., for Folder DH-532 listing strengths and weights of a full range of Cable-Laid Slings.

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Circle Item No. 54—Reader Service Card



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*Work chemically in urinals, guaranteed  
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Only Huntington Odor Bar Blockettes sanitize as they deodorize. Moisture immediately releases an antibacterial chemical vapor that almost totally (94.4%) destroys bacteria. Blockettes remove the causes of bad odor instead of covering it up. You must be satisfied or your money back. Send for a free trial package today.



Want experienced counsel in solving maintenance and sanitation problems? See the Man Behind the Drum . . . your Huntington representative.

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Circle Item No. 55—Reader Service Card

## Operation Deep Freeze

—From page 21

chanical failures to a minimum, a rigid maintenance program was put in effect. Should a plane be forced down, air rescue operations were planned with Skymasters, Neptunes, Skytrains, Globemasters and helicopters.

In the event of plane failure over level area, ski-rigged Neptunes or Otters could be dispatched for the rescue. If over a mountain or badly crevassed area, a Globemaster could drop snow vehicles and survival equipment.

If the area was too rugged for vehicles, dog sled teams could be dropped to carry injured men to points where aircraft or helicopters could pick them up.

**Trail hazards**—The Antarctic ice mass is crisscrossed with treacherous crevasses—some hundreds of feet deep. Often a crevasse is masked by a light covering of snow which yields under the weight of mechanized equipment, plunging vehicle and personnel into the depths.

These trail hazards were anticipated. Treads of 54 in. on the 37-ton D-8 cats gave about the same ground pressure as a 160-lb. man. Lightweight alloys were used on wanigans and tractor cabs to reduce weight.

The sleds for handling supplies weighed 11 tons and could carry 20 tons. Two sleds were pulled by each tractor, a 40-ton payload of food supplies or the 4 by 8-ft. panels 4 in. thick used to construct buildings. On crusty snow these cat trains would bear down only about one inch.

Tractor trains were preceded by trail-blazing reconnaissance parties with crevasse detectors to find snow-covered crevasses. In addition, small ski-equipped Otter aircraft were used for trail party support.

Tractor doors were left open in areas known to be hazardous. When heavy tractors were used in crevassed areas, cat drivers operated with plow lines at a distance away from and to the rear of the train.

**Exposure**—Clothing was provided for all temperatures. Waffle-weave cotton drawers were good for cold to 30 below. Outfits con-



sisted of light kapok-lined inside with windproof outer cover. Furlined parkas, fleece-lined flight boots and thermal boots were available.

Little frostbite was suffered. The clothing proved thoroughly adequate.

Three fatalities were suffered in tractor accidents. Two of these occurred the first year, one in the second. Early in the first year, a 35-ton tractor plunged through the bay ice into 600 ft. of water, taking the life of a Seabee driver. Another Seabee fell with his tractor into a 125-ft. crevasse about 100 miles from Little America. The second year a Weasel plunged through the bay ice with its driver.

Four men died in a plane crash, and another airman went down in a helicopter crash. The severity rate was reported to be high, by controlled stateside standards in the round-the-clock crash program. However, minor injuries were infrequent.

Health problems have been surprisingly few. When the ships leave each year, there are a few colds and respiratory diseases. After that, the climate is so cold, these diseases do not recur.

Deep Freeze '60, now underway, promises to be another year of Antarctic firsts. Air Force Globemasters will drop a 16,000-lb. tractor at the South Pole. It will prepare a runway for ski-equipped C-130 jet-propellor Hercules planes, used for the first time in the Antarctic.

The Army, Air Force, Coast Guard and Marines will join the Navy in supporting the scientific effort. Rear Admiral David M. Tyree will be in command.



"Now will you stop trying to beat the office bunch to the snack bar at coffee break."

## BERYLCO TOOLS when safety counts

Today's plant engineer always puts safety near the top of any list. He knows that modern tools . . . made of low-cost beryllium copper . . . mean far more than the words "spark-resistant." They not only cut chance of costly fire and explosion, but these up-to-date tools are non-magnetic and can never corrode. Workers like their strength and handling ease.

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Send me free copy of your new safety tool catalog. Include name of my distributor.

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CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

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Reading, Pennsylvania

# TOPS *in* SAFETY



TM Alloy Chain puts muscle in your safety record. Enormous tensile strength—125,000 lbs. p.s.i. ... rugged stress-free links ... controlled heat-treating. These are a few of the reasons why TM Alloy Chain is on the job in industry all over America. See your distributor or write for Bulletin 14. S. G. Taylor Chain Co., Inc., Hammond, Indiana



**Taylor**  
**Made**  
**CHAIN** SINCE 1873  
Circle Item No. 57—Reader Service Card

## Our First 40 Years

—From page 10

Milwaukee Optical Manufacturing Company  
Surtly Guard Company  
Stonehouse Steel Sign Company  
Safety Service & Engineering Company  
Consolidated Expanded Metal Company  
Lungmotor Company

At the end of six months the NEWS carried this message in a full-page display.

"We hope that through the advertising pages of NATIONAL SAFETY NEWS we have been of service to the reader and to the advertiser alike, and that in the coming year we may render an even greater service than we have rendered during the six months the NEWS has been carrying advertising."

In May 1921 the NEWS was changed from a weekly to a monthly publication. The first monthly issue contained 56 pages, and the magazine increased steadily in size until the depression of the 30's caused curtailment. Just as recovery was getting under way, the wartime paper shortage gave it another setback. The December 1944 issue dropped to 32 pages, with no advertising. Its cover carried the greeting, "Paper Is Rationed — But Not Christmas Wishes."

This year's Congress issue (October) contained 258 pages, and the 1959 Equipment Issue had 340. Regular issues, not counting *The Journal of the American Society of Safety Engineers*, averaged 138 pages during the past year. The *Journal* appears in the February, May, August and November issues as a 20-page insert.

During its 40 years of publication the NEWS has been under the direction of three editors. Louis Resnick, its founder, resigned in May 1922 to become associated with the National Society for the Prevention of Blindness, remaining with the Society until his death in 1940. He was succeeded by George Earl Wallis who left the Council January 1, 1925, to enter the advertising field. Carman Fish, who had been associate editor for two years, has been editor since that date.

Throughout the years, the pages of the NEWS have reflected the de-

velopment and growing maturity of the safety movement, as well as improvements in publishing techniques.

As a statement of purpose, the NEWS added to its masthead, "Published in the interests of accident prevention and the health of industrial workers." Its emphasis has been primarily in the industrial field. But developments during the 20's, particularly the growth of motor vehicle traffic, made it apparent that one magazine could not continue to serve the entire field of safety adequately. So, in February 1927, a new magazine, *Public Safety*, was established. To describe its scope more accurately, its name was changed to *Traffic Safety* in June 1957.

Several other publications now serve specialized branches of safety. *Safety Education* provides information and practical classroom material for teachers and others interested in safety in schools.

Four pocket-size magazines are now published for employee distribution by subscribing companies. These are: *Safe Worker*, *Safe Driver* (in four editions), *Safe Builder* and *Safe Railroader*. To aid foremen *The Industrial Supervisor* was added to the list of Council periodicals.

Expansion of home and farm safety activities in early World War II years brought two more publications into existence—*Home Safety Review* and *Farm Safety Review*.

In their own specialized fields these magazines supplement the NEWS which is published primarily for industrial readers. However, the NEWS does not limit its contents to occupational safety and health subjects, since industry is vitally concerned with the safety of employees and their families off the job and the promotion of safety activities in all fields.

## Personalize Training

Mass training methods have many weaknesses. Such training must, of necessity, be general. The hoped-for carryover from general to specific conditions does not follow, since specific interpretation is left to the worker. Mass safety education methods should be supplemented by more personalized safety training.—Ellis L. Stout, Los Alamos Scientific Laboratory.

# Keep 'Em

NEW SAFETY POSTERS  
NOVEMBER 1959

Regular poster users will receive this bulletin by mail each month. Add it to your 1959 Poster Directory to keep it up-to-date.



... FOR EFFECTIVE RESULTS  
IN YOUR SAFETY PROGRAM

*Put new posters up... hold your accident rate down*



JUMBO POSTER FOR JANUARY 1960

## JUMBO POSTERS

Giant safety messages that are 11'8" wide by 9'11" high. Colorfully printed and weather resistant, these posters command attention. Issued monthly, JUMBO posters will add drama and impact to your safety program... and get big results!

## SAFETY BANNERS

A powerful safety message, skillfully designed and colorfully printed on cloth. They measure 3½ ft. high by 10 ft. long. Available in 2 types—outdoor and indoor. Issued monthly, these banners can be spotted in strategic locations in and around the plant.



NATIONAL SAFETY COUNCIL

NATIONAL SAFETY COUNCIL

ON THE JOB OFF THE JOB



YOUR SAFETY is UP TO YOU!

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1624-A 8½x11½

WEAR'EM



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## THERE'S AN EFFECTIVE POSTER

... for every problem  
... for every program

Every safety program needs some off-the-job emphasis. In fact, it should be planned into each month's schedule.

Poster numbers 1624-A, V-1724-B, and 1739-A (all shown here) are indicative of the off-the-job variety in the 1959 Poster Directory. Every Directory-listed poster may not be available—stock not guaranteed after Oct. 1—so please indicate alternate choice when ordering.



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1741-A 8½x11½

BE  
ALERT



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Cover that  
COUGH—



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1739-A 8½x11½

### CLASSES OF FIRES

 CLASS A FIRES WOOD PAPER RUBBER, ETC.	 FOAM OR SODA-ACID	 WATER PUMP	 GAS CARTRIDGE	 DRY TYPE DRY POWDER DRY SAND CLASS A FIRES
 CLASS B FIRES OIL GREASE FLAMES	 FOAM	 VAPORIZING LIQUID	 CARBON DIOXIDE	 DRY CHEMICAL
 CLASS C FIRES ELECTRICAL EQUIPMENT	 VAPORIZING LIQUID	 CARBON DIOXIDE	 DRY CHEMICAL	 A SPECIAL MIXTURE OF DRY POWDER AND CHEMICALS FOR USE ON ALL TYPES OF FIRES

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1793-B 17x23





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V-1746-B 17x23



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1684-B 17x23

# YOUR **POSTER** PROGRAM SELLS SAFETY... 'ROUND THE CLOCK!

You can't beat National Safety Council posters for adding *visual impact* to your safety program. They're the "color spectaculars" that make repeated visual impressions of the importance of safety in your workers' daily lives, in and out of the plant. Poster subjects should be related to plant accident experience, thus pinpointing causes, hammering home prevention ideas and achieving effective results. For further information or program planning aid, write direct to the Membership Service Division, National Safety Council.

Here's  
how  
to use  
posters  
most  
effectively

- 1 SELECT POSTERS FOR VARIETY**  
Select a balanced supply of posters in a variety of sizes and the proper proportion of thought-provoking vs. inspirational, serious vs. humor, long-message vs. short.
- 2 PLACE POSTERS STRATEGICALLY**  
Tell the effectiveness of different locations. Use short "flash" type posters where traffic is on the move. Longer messages are more effective where workers congregate or move slowly... such as washrooms, lunchrooms, toolrooms, smoking areas, etc.
- 3 DISPLAY POSTERS ATTRACTIVELY**  
Provide bulletin boards or frames for displaying your posters. Most important of all, see that your posters have adequate lighting, natural or electric, so they can be easily seen and read. Select the proper height for display in locations where viewers are walking or seated. Do not crowd too many in one location or clutter them by surrounding with other material.
- 4 CHANGE POSTERS FREQUENTLY**  
Posters not intended for permanent display should be changed once a week. Regular rotation of posters insures maximum interest and attention, keeping workers aware of the importance of safety in their jobs.

## ORDER YOUR **POSTERS** TODAY!

Cash in on the timeliness, repetition and continuity of a poster program by placing your order now. Order posters from this bulletin or refer to the National Safety Council 1959 Poster Directory. The complete directory is available for 60c a copy. An automatic monthly poster service is also available at an annual low cost. Write The National Safety Council for further information.



### POSTER PRICES\*

Cat. No.	Type and Size	Single	2 to 4	10 to 99	100 to 999	1000 to 4999
182.13	"A" (8 1/2 x 11 1/2)"—Any selection, each	.....	.....	\$ .12	\$ .07	\$ .06
182.23	"B" (17" x 23")—Any selection (except prefix "T"), each	.....	.....	.23	.195	.155
381.33	"B" (17" x 23")—Any selection with "T" prefix, each	.....	.....	.20	.165	.132
381.31	"C" (25" x 38")—Any selection	.40	.40	.30	.24	.22
184.41	JUMBO POSTERS—Annual subscrip., each (12 posters)	\$ 69.00	67.00	65.00	61.00	
188.51	SAFETY BANNERS—Annual subscrip., each (12 banners)					
188.61	INDOOR	93.00	87.00	83.00	79.00	
	OUTDOOR	100.00	95.00	90.00	85.00	

\*Members receive 10% discount on these prices. Please enclose check or cash with orders less than \$3.00. Prices are subject to change without notice. Quantity prices apply only on a single shipment to one location. Other terms are stated in official price lists.

**NATIONAL SAFETY COUNCIL**  
425 N. MICHIGAN AVE. • CHICAGO 11, ILLINOIS

## Nuclear Facility

—From page 25

plans called for about 150,000 cfm. of exhaust air, which includes a small factor for possible future expansion.

Approximately 150 separate operations require exhaust ventilation. The perfect solution would have been to provide an individual duct, fan, filter, and control for each function, but cost prevented this.

The other extreme would have been to install three or four large systems. This would be most economical, but it would be too difficult to keep the systems properly balanced. As a comparison plan, 32 multiple-branch exhaust systems were installed. After the necessary amount of exhaust air required had been determined, it was possible to go ahead with heating, plumbing, and electrical plans.

Proper balance between supply and exhaust air, as well as general air-flow patterns, is critical. Research labs require clean air for sensitive analytical work conducted. Ventilation designed must provide enough exhaust air for the operation, and enough supply air to create a positive pressure in those sections of the building. Positive pressure tends to keep out possible fumes or smoke from fabrication areas or from outside the building.

Supply and exhaust air has been designed to create a positive pressure in Building A (administration and research and development), and a negative pressure in Building C (fabrication). When windows are closed, all air coming into Building A is filtered.

**Heating.** The problem of heating becomes a formidable one, since the large amount of exhaust ventilation moves most of the heated air out of the plant almost as quickly as it is heated. When all ventilation is operating, there is a complete air change in the plant about every 13 minutes.

Past experience proved a single boiler was not dependable throughout a cold New England winter. (On several cold days at NMI's old location the boiler had failed during the work day, and temperatures in some areas dropped from 68 F to 20 F in about eight minutes. All ex-

## INSTANTLY INACTIVATES CHEMICALS IN THE EYES OR SKIN



### NEUTRALIZE/Bullard

Where speed is so critical in the emergency treatment of acid or alkali splash in the eyes, *Neutralize* works many times faster than water dilution. *Neutralize* buffering action rapidly inactivates effects of chemical irritants. In 4, 8, 32 ounce and 1 gallon plastic bottles and 5 gallon plastic cubitainer with flow tube.

Write for data sheet.

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## NOTHING BUILDS A SAFETY PROGRAM LIKE WEARER APPEAL



*New Exclusive!*

### WELSH TWO-TONE UNIBRIDGE Model 2200T

**HANDSOME TWO-TONE, HIGH STYLING** in seal brown color with most modern safety spectacle design appeals to wearer.

**AUTOMATIC FITTING** of more than 95% of employees saves time, cuts inventory needs.

**ARE YOU SATISFIED** with your eye protection program? Unless you can honestly answer "Yes", you owe it to your company and employees to try the safety spectacles by which all others should be judged.

WRITE FOR BULLETIN #43



**WELSH**

MANUFACTURING COMPANY

MAGNOLIA STREET, PROVIDENCE, R. I.

WELSH — Willingly Worn  
by Workers Everywhere

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## AMAZING NEW URETHANE FILTER!



Entire mask is a filter — more than double the filtering area of most other masks . . . urethane foam reduces inhalation resistance, makes breathing easier.

3 to 4 times lighter — entire mask weighs hardly more than an ounce . . . comfortably hugs contours of the face.

Outlasts ordinary filters — urethane foam is washable, reusable . . . it's non-allergenic, won't absorb moisture, won't mildew or deteriorate . . . it's tough, durable and stable.

Inhale and exhale valves mounted on chassis.

See your EYE SAVERS Dealer or write



See your local Eye-Savers Dealer or write . . .

**WATCHMOCKET OPTICAL CO., INC.**

232 West Exchange St., Providence 3, R. I. Throughout Canada • LEVITT-SAFETY LIMITED

haust air vents had to be closed and personnel sent home or to warmer parts of the building.)

At least two boilers became necessary at the new location with either one capable of providing total plant heat when the temperature is 32 F. Outdoor temperatures below 28 F require both boilers operating simultaneously to provide 68 F temperature indoors. Two boilers also permit better maintenance. One can be shut down and serviced, while the other remains in operation.

It was calculated that at 0 F it costs about \$300 to heat the facility for 24 hours with all exhaust ventilation operating. Since operations are conducted during only 8 of the 24 hours, all exhaust ventilation is shut off when not needed. This presents another problem: possible fallout of toxic materials into lab areas from duct work as a result of downdrafts, vibration, and other causes.

To avoid possible contamination, several weekly checks are performed. Interior of the ductwork is inspected for accumulated or loose materials. Backflow dampers on all exhaust systems are inspected for proper operation.

Twenty-four-hour, in-plant, air-monitoring stations are analyzed to determine air contamination. At the end of each day, after everyone has left the building, the systems are shut down by the guard force, which turns them on before the start of work on the following day.

The heated air supply systems are electrically connected to the exhaust air systems. One operates with the other to maintain the proper pressure balance, particularly when overtime operations require only one or two exhaust systems.

When ventilation is shut down, the heated air supply systems are also shut down. Areas that must be heated during these periods are serviced by forced hot water via heating coils extending below the windows. This is accomplished through a heat exchanger fed by steam from either or both of the boilers.

To keep the limits of environmental contamination well below those required by health and safety regulations, each exhaust air system used with toxic materials is equipped with absolute filters. On three of

For Every Need . . . Every Budget!

# MAKE YOUR OWN CHOICE!

There are complete lines of Carpenter Emergency Lights for all basic needs . . . the widest choice of powerful, dependable, durable lights available.

**WARNING LIGHTS:** Vehicle and stationary types . . . colored, flashing, oscillating, revolving!

**HANDLIGHTS:** Powerful "Portalites" with the famous extra-wide coverage! Rechargeable or dry battery types.

**VEHICLE LIGHTS:** Searchlights, floods, colored signal and warning lights for all service and emergency vehicles.

**PANIC LIGHTS:** Watchmaster "Automatalites" automatically guard against light failures. All types including explosion-proof, dust-tight, and remote control.

Your Guide to over 100 Emergency Lights . . . the Carpenter Catalog. Write for copy.

## CARPENTER MFG. COMPANY

642 Bradley Street, Somerville 45, Mass. Telephone MOument 6-4300



these exhaust systems, cyclone collectors are installed in front of the absolute filters to collect fine wastes from machining operations. The waste is then checked for accountable materials such as uranium. Each stack on a vent used for toxic materials is sampled around the clock to determine the effectiveness of its filters.

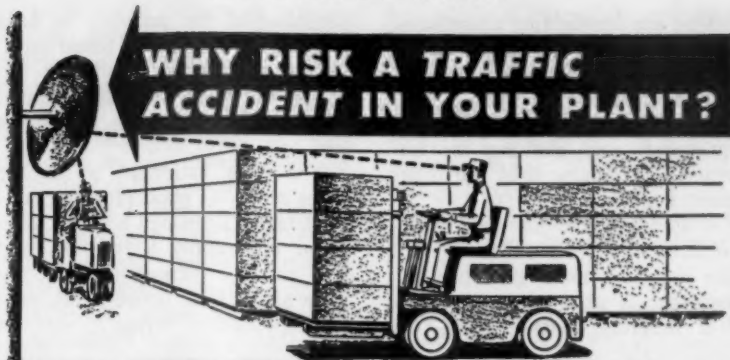
Air sampling stations located at the four extreme corners of the building provide additional information for environmental studies. For sampling ground water, eight wells were driven into the ground on the property line. The same well sites are used for soil, rain, snow, and air sampling stations. This sampling program began about two weeks after the land was purchased, almost 1½ years prior to occupancy.

**Liquid Waste Disposal.** The hilly area leveled to form the site for the plant fortunately contains soft and sandy soil which allows good drainage consistent with a high soil pressure. This helps greatly in disposal of sanitary and industrial liquid wastes.

Sanitary drains end in a leach bed of crushed stone on top of sand, but liquid industrial wastes are treated in a special facility separated from the main plant. This special facility is provided to neutralize these wastes, if acid is present, and to direct them into holding tanks and drain fields where they are checked before release to a drainage bog.

All liquid wastes from operations with radioactive materials are collected in separate containers and disposed of by commercial means. Because of the importance of the liquid waste program, the entire system is monitored and surveyed every working day.

**Fire Protection.** The town of Concord in a semi-rural community, and consideration had to be given to adequate fire protection in the new location. Although Concord has an excellent fire department, the distance to the nearest engine house is greater than it would be in a large city. Because of this, a well-equipped fire brigade of company volunteers has been organized and trained in fire pre-



**KLEAR-VU SAFETY MIRRORS** are the answer to the dangerous blind corner problem in your plant or warehouse. They are also adaptable for outdoor use in your parking lot, loading dock area or other points where traffic converges.

Mounted at cross aisle intersections, entrances and exits at a height of 8 to 10 feet, Klear-Vu Safety Mirrors clearly reflect oncoming intersection traffic to both power truck operators and pedestrians.

Available in either convex or flat glass styles, the mirrors are easily installed and quickly adjustable to any desired angle.

Style	No.	Dimensions
Circular Convex Glass	120	12" dia.
Circular Convex Glass	180	18" dia.
Circular Convex Glass	240	24" dia.
Circular Convex Glass	300M.R.	30" dia.
Circular Convex Glass	360M.R.	36" dia.
Flat Glass Rectangular	918	9"x18"
Flat Glass Rectangular	1640	16"x24"

M.R. indicates metal rim.

Special sizes made to order. Polished flat metal mirrors available.

## LESTER L. BROSSARD CO.

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Write for  
Bulletin.

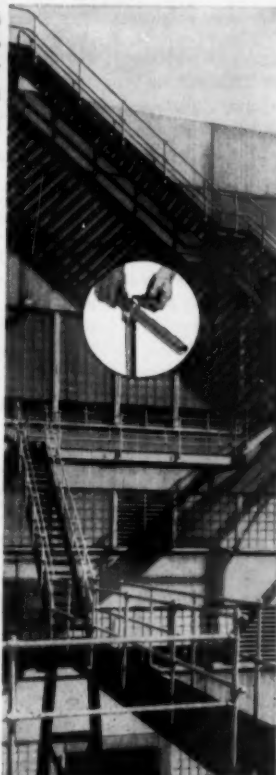
## SMART STEPS TOWARD GREATER SAFETY WITH NU-RAIL SLIP-ON FITTINGS

Nu-Rail Fittings, such as those used by International Paper Company at their new Pine Bluff, Arkansas, Mill, can save both time and money. These savings can be yours, too—savings up to 80% on labor costs, 30% on materials cost, 60% on installation time—because Nu-Rail fittings require NO WELDING . . . NO THREADING . . . NO CLAMPS, WASHERS OR NUTS TO ASSEMBLE!

With a hex key, a hack saw and Nu-Rail fittings, you can quickly install a railing as strong and safe as the pipe itself. Just slip the fitting over the pipe and tighten the hardened set screws. It's as easy as that.

Leading distributors handle these fittings, both NU-RAIL and the lighter duty SPEED-RAIL fittings. Write for descriptive Bulletin 27-S

THE HOLLAENDER  
MANUFACTURING CO.,  
3841 Spring Grove Ave.,  
Cincinnati 23, Ohio



vention and fire-fighting procedures.

Four hose houses, located on the ground at each extreme corner of the plant, house a hydrant and enough hose, tools, protective equipment, and clothing for immediate use during fires and other emergencies.

A standing rule is: the fire department must be called for all fires in which more than one extinguisher is used or required. A 50-ft firebreak extends along the

perimeter of the property to help prevent the spread of forest fires. During times when the forest fire danger is extreme, a fully-equipped patrol is maintained on the premises.

The town maintains a suitable water supply at good pressure, supplied to NMI through a 12-in. town main. The supply is then diverted at a concrete pit into an 8-in. fire main and a 6-in. house main, each with appropriate valves to shut off

the supply at this control point. This fire main supplies all yard hydrants and sprinkler systems of the plant.

A fire department siamese connection is also located at the pit, so pressure can be supplied to the fire loop from a town hydrant located on the 12-in. street main through a fire department pumper. Appropriate post indicator, divisional, and sprinkler control valves are located on the fire main, each marked with its proper use and the direction of closing and opening.

The plant is provided with a wet sprinkler system, checked weekly with new spray-type sprinkler heads set to operate at the lowest feasible temperature.

The H-shaped building lends itself well to a fire protection program. Solid fire walls with gravity-action Class A fire doors break the installation into three separate areas. During emergencies, these doors are closed by fire brigade personnel. More-than-adequate fire towers (stair wells) are located in each of the three areas for fire escape, and are closed off by Class B fire doors.

Periodic exit drills are held to keep personnel constantly aware of emergency evacuation procedures. Three of the four drills held each year are unannounced. The evacuation alarm system, controlled from the guard center, can be used in any one or all sections of the building. The same system will be coupled to apparatus for an automatic evacuation alarm in the event of nuclear emergency.

In-plant fire stations, containing several extinguishers and other emergency equipment, are located in the corridors of the building where they can be seen and maintained easily and quickly. Periodically all employees are given instruction in first-aid and fire extinguishment.

A flammable liquid storage house located 100 ft. from the building is protected by a dry-chemical piped system. In all but the most critical analytical work, when amounts are restricted to one pound or less, flammable liquids are used only in safety cans.

Although New England has fewer thunderstorms than most sections of the country, there are still between 15 and 20 storms each

Circle Item No. 64—Reader Service Card



### Can Be Used on Horizontal or Vertical Poles or Pipes!

Knotty ladder ropes have finally come to the proverbial "end of their rope" since the invention of Ladder Lash, latest product of Rose Mfg. Co. The Safe-Hi Ladder Lash, a parachute web strap, solidly anchors ladders for high-climbing workmen, ending the hazards of wobbling, tottering ladders. Ladder Lash will anchor on poles up to 20" in diameter making it ideal for utility pole use as well as any other horizontal or vertical poles or pipes.

### No Groping in Mid-Air

Ladder Lash does away with top-rung confusion. In one quick motion the strap is wrapped around any horizontal or vertical pole, the forged steel snap is clipped into the swivel eye bolt and the strap is pulled through the adjustment slide until taut. A simple device, Ladder Lash is

easily attached to any ladder. Workmen are sure to like the dependable safety features of the Safe-Hi Ladder Lash.



### Safe-Hi Pole Grip Adds Extra Safety Feature

Use Ladder Lash and Pole Grip together for the extra measure of safety. Safe-Hi Pole Grip, already favored by "Higher-ups," is made of 4-ply web strap 26"x1 3/4" wide with a center section of neoprene tread for super gripping strength on vertical poles.

#632—Pole Grip

#645—Ladder Lash

**Safe-Hi** ROSE MANUFACTURING COMPANY  
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Circle Item No. 65—Reader Service Card



year that cause damage and cut off power until repairs to wires and equipment can be made. A power failure during an operation with toxic or radioactive material would cause the ventilation system to shut down and possibly create a serious problem.

Lighting, communications, fire alarms, and other necessary services would also become inoperative. Because of this, a 115 kva emergency diesel generator is installed next to the transformer and switch room. When the main power fails, the generator starts automatically and provides power for necessary services.

**Materials Handling.** Problems in materials handling and maintenance were especially prevalent at the company's old location in Cambridge. A great deal of planning was devoted to eliminating these difficulties at the new site. The traffic of heavy weights and equipment caused most of the disabling injuries and accounted for many hours of effort overcoming hazardous conditions at the old plant.

In the new building the first floor, all storage buildings, shipping rooms, and warehouses are set at almost ground level. Materials can now be moved about easily by hand or power trucks. A hydraulic lift installed in the shipping area adjusts to the level of any truck for quick and safe unloading. A five-ton craneway extends the length of the heavy equipment area.

All the heavy work is carried on at the same level in areas serviced by overhead cranes and hoisting equipment. Lighter and more delicate work in the laboratory areas on the second floor is serviced by a large hydraulic elevator with a load limit of five tons.

**Housekeeping.** Plant housekeeping is one of the most important factors in any good industrial safety and fire prevention program, but particularly in plants working with radioactive and toxic materials. Special hazards have to be considered, such as possible spread of contamination by foot and vehicle traffic, and possible airborne contamination caused by sweeping and dusting. Personal hygiene and locker facilities assume new importance.

Another standing company rule

prohibits use of brooms or brushes in plant areas containing toxic or radioactive materials. A vacuum cleaning system has been installed throughout the plant. Except for floor washing, this is the only system used by the custodial service group for plant cleaning.

All floors in the plant are vacuum-cleaned each day. Two 15-hp. motors driving turbines provide necessary suction for the vacuum cleaning, and cyclone collectors pick up particles. On leaving these col-

lectors, air is filtered through absolute filters.

To accommodate frequent floor washing, floors in the building are covered with various grades of linoleum and asphalt tile, which are easily removed if contamination occurs. Cleaning service is provided during the late evening and early morning hours to prevent interruption of plant operations.

**Protection of Personnel.** The guard center, located in the central

Circle Item No. 66—Reader Service Card

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HIGHLY  
INFLAMMABLE

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**X-RAY**  
**KEEP OUT**

**CAUTION**  
CHEMICAL  
GOGGLE AREA

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Distributors wanted. Write for proposition.

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Circle Item No. 67—Reader Service Card



service building, is manned 24 hours a day. It is through this center that employees enter or leave the building. Film badges have been combined with identification badges and are stored at this point. The badges are issued to employees on arrival and are collected at the end of the day. In this way, the Safety Office can be sure the badges are not exposed when not in use.

Stairways to the employees' locker rooms start at the same guard station. In the morning, street clothes are exchanged for company-owned clothing, including under-

clothes and shoes. In the evening, this is collected and monitored in the locker room. Employees can take a shower, if necessary, depending on the type of work performed.

Employees leaving the plant are frequently subjected to unannounced checks by the Safety Department to insure they are free of contamination. This has been found more effective than self-checks by the employees, particularly when on their way home. Complete supplies of protective equipment and clothing are available next to the locker rooms to make clothing changes

convenient during the day's operations.

**Acid Disposal.** Some processes at NMI require acids for pickling and etching various metals. At the Cambridge location, this accounted for corrosion of many drainpipes. Replacement and maintenance costs were exceptionally high. In the new facility, acid waste is channeled through glass drains and piping.

In the last stages of construction and during the move, considerable glass breakage occurred in this system. Since that time breakage has stopped and the system is operating well.

During the first period of use, an occasional slight leak developed at gasketed flange joints, but a few turns on the flange bolts stopped these leaks. After several months, they ceased entirely.

Any blockage in the glass pipeline may be easily spotted. Because of flanged joints, maintenance is simple. Additions are easily available from local glass distributors.

Preconstruction planning by NMI personnel has been more than repaid by the safety and efficiency of the new facility. The value of thorough, painstaking planning cannot be overemphasized.

Consulting with employees also has produced many practical and valuable suggestions based on their own experience, and helped induce a greater sense of responsibility and cooperation in the hectic days of relocation.

### Announce Workshop On Radioisotopes

The U. S. Atomic Energy Commission and West Virginia University will co-sponsor a two-day Workshop on Industrial Uses of Radioisotopes in Morgantown, W. Va., Nov. 19-20, 1959. The meeting is designed to acquaint industry with the many industrial applications of radioisotopes and the opportunities provided by them.

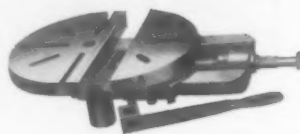
Management and technical personnel, educators and others wishing to attend may obtain additional information from Prof. James A. Kent, Department of Chemical Engineering, West Virginia University, Morgantown, W. Va.

Circle Item No. 68—Reader Service Card



## USE THE MODERN Safety Drill Table

Saves fingers! Saves time! Replace your present drill table with the Modern Safety Drill Table—then drop in the work and drill. Eliminates dangerous, hand held, small jobs. Handles odd, irregular shapes and sizes without V-blocks, clamps or parallels. Sizes for every need, with diameters from 8" to 27½". Guaranteed to save its cost in labor alone in 6 months. Write for literature.



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With Johnson All Rubber Ankle Action Dielectric Ladder Shoes. The Choice of Ladder Climbers in all parts of the world.

**WORK SAFELY ALL-WAYS**

FOR EXTENSION LADDERS

Our Step Ladder Shoes are popular with maintenance men in homes, office buildings, schools, hospitals and etc. Dealers in all principal cities. Ask your Safety Supply Dealer or send direct. Your order will be shipped promptly.

**Johnson Ladder Shoe Inc.**

**Eau Claire, Wisconsin**



FOR STEP LADDERS

Circle Item No. 69—Reader Service Card



## Global Construction

—From page 110

wanting to work longer hours, we purchased clocks for each village and carefully explained to each chief and his men that from now on they would come to work at 7 o'clock or else get fired.

They were delighted with the clocks, and all understood what we meant by 7 o'clock. The day we made the change, no one showed up at 7 o'clock. But when the shadow crossed the line, they all appeared.

We threatened, and we pleaded—to no avail. In the end we had them build us one of their dials in front of our office, and from then on we all worked by the sun dial.

Getting the right men to run overseas projects is no small matter. A good overseas construction manager must be a highly qualified individual, possessing all the skills of a domestic construction man, plus a bag full of others.

He must be diplomatic, stable, self-reliant, tolerant, patient, capable of handling a broad range of problems. The wrong man on an overseas job can cause irreparable damage in a short time.

Manners and morals of foreign workers must be understood and appreciated by the American manager. Courtesy is essential in all dealings. There can be no signs of disrespect. Most foreigners are extremely sensitive. In some countries, raising your voice to a man is the equivalent of assault. If a manager wishes to terminate a particular worker, he often does so without giving reasons.

In some cases the worker must be eased out of the job in the most diplomatic way possible. A manager never accuses a man of anything, especially in Latin America, unless he has absolutely irrefutable evidence. Otherwise the subject may sue for character assassination—and probably will win his case.

We have plenty of other unusual problems overseas—all the way from keeping witch doctors out of our construction camps to staging amphibious landings on rocky beaches.

Much of our highway work is in remote areas of Thailand, Liberia, Colombia, and Kenya, where we operate from construction camps

deep in the jungles. The safety problems alone are numerous.

The first precaution we take is to inoculate all our men for every disease that's known to occur in a given area.

The camp is a major headache. The site first must be carefully selected to be sure of good drainage,

adequate water supply, and relative freedom from disease. Since most of our jobs are in or near the tropics, disease is a major problem. Epidemics can develop almost overnight. So we are extremely strict about camp cleanliness, water purification, and waste disposal.

As much as possible, we segre-

Circle Item No. 70—Reader Service Card



## FOOT-TOE-LEG Protection by "Sankey"

(left) Improved FOOT GUARD  
(Style #200 illustrated)

**FOOT GUARDS** consist essentially of a metal shield to be worn over the shoe whenever the foot is in danger of being either crushed or cut. The metal shield is designed to furnish a maximum

amount of protection to the entire foot—not merely to the toes alone, but also to the instep—against hazards from falling, rolling or flying objects, or from accidental tool blows.

## TOE GUARD →

fills a demand for toe protection in occupations where hazards injurious to toes exist. They fit any shoe, afford maximum toe protection, and like the foot guards do not encase the toe to the discomfort of the worker. (Style #700 illustrated.)

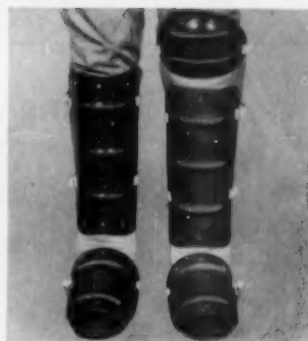


## Fibre Instep & Leg Guards

These guards provide protection for the instep, shin and knee. Light weight, absolute freedom of leg motion, comfort and utmost protection are provided by the leg-contour shaped "Sankey" fibre guards. Guards are used when handling pulpwood, clearing brush, cane cutting, and numerous factory operations.

For more information write today

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Leading resuscitation experts help you train your people easily and quickly to do this newly adopted, more effective method. Write us for a new print, which you may review and purchase, or return after five days. (16mm, black and white—5 min.—\$40.50)

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Circle Item No. 71—Reader Service Card

gate Americans from local workers to reduce the chance of spreading diseases. And those natives who do come in close contact with the camp are checked regularly by our doctor. We even check the local villages and offer to help sanitize them—if we think it might make our camp safer from disease.

In our large camps, we process water with package units that filter and chlorinate. Camp sewer systems are elaborate, considering the conditions. We use running water sewer systems leached into areas that will not contaminate our water supply. Kitchens must be kept spotless.

Our pioneer crews live in small forward camps, and they maintain the same rigid specifications for cleanliness and sanitation. Their equipment is on a smaller scale, but they purify their own water, refrigerate their food, and dispose of wastes carefully.

Forward crews encounter most of our problems with animal life, especially snakes. Although construction noises drive most animals

away, workers must keep alert. Generally, we let the local men watch for animals because they live in the jungle and know it.

They can detect a python in the branches overhead that most of us would certainly overlook. And they can kill it quickly, when they have to. Poisonous snakes, of course, are much more dangerous. And we make sure that snake-bite kits and antidotes are kept on hand with forward crews, and that they know how to use them.

Once in a while, we have trouble with other jungle animals. One of our men told me of an experience he had recently on our 300-mile highway job in Thailand. He and another worker were welding a tooth on a shovel bucket somewhere in the jungle, when one of them turned to see a full-grown tiger staring at them only a few feet away.

They were frozen with fear, until they realized that the animal was temporarily mesmerized by the welding arc. As soon as they regained composure, one of them

slipped away, grabbed a gun and shot the tiger. That's the kind of problem they don't cover in the safety textbooks.

Control of mosquitoes and the treacherous tsetse fly are big problems in some areas. The best way to combat mosquitoes, of course, is to eliminate their water breeding places. So we spend a lot of time spraying pools and puddles.

We make special efforts in our grading work to provide maximum drainage and reduce chance of stagnation. Floods during and after the rainy seasons present a big problem. We must make every effort to get rid of the water as fast as possible. Not just to make better working conditions, but to eliminate the potential mosquito-breeding places.

It's much more difficult to eliminate the breeding places of the tsetse fly. Fortunately the insect limits itself to fairly well-defined areas, and if we have to work in such an area, we make sure all personnel are inoculated.

Although we try to maintain the

**King Arthur claims:**

*"I don't jest when I joust, no foolin'*

**Dockson**  
HELMETS

*are ye best for protection and comfort."*

Model 1450

Complete, comfortable protection against sparks, flash and dangerous rays. Light, roomy, adjustable, easy, one-hand raising. Stays where you want it.

Built to last of tough, one-piece, rivetless, moulded fibre.

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**BLOCK THAT WHEEL**

**... and PREVENT THIS!**

Safety Wheel Blocks are light, strong, tough because they're **STEEL CASTINGS**. Hold heavy trucks, trailers with ease. Prevent accidents caused by vehicle moving away from dock while loading, unloading. Easy to handle, store. Practically indestructible. Stocked for immediate delivery.

**\$10.95 ea.**  
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Order now for immediate delivery! Write for illustrated catalog.

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Circle Item No. 73—Reader Service Card

**National Safety News, November, 1959**

most modern medical facilities in our camps, we occasionally have a tough time administering to local workers. If we don't treat an injured worker quickly enough, we're liable to find him back in the native village under the care of the resident witch doctor. And the care is usually pretty weird.

In some places the local witch doctor will treat a broken leg by breaking the leg of the nearest chicken he can find and hanging it up on the wall of the hut. According to custom, if the chicken pulls through, there's hope for the injured worker. If not, the witch doctor might even make sure the man doesn't survive—just to preserve the witch doctor's record.

But we're making good progress in educating these people in the wonders of the white man's medicine. If we can just keep the witch doctors looking the other way, we'll be okay.

The health of our men is extremely important overseas. We provide the best possible food, clothing, shelter, and medical care. We protect them from oppressive heat by air-conditioning their quarters, by working only in the cooler parts of the day. On our new work in Iran and Iraq, for example, we expect to shut down between 10 a.m. and 3 or 4 p.m. You just aren't worth much when the temperature is 120 degrees.

Probably the biggest safety problem we have overseas is the unfamiliarity of most local workers with mechanical equipment. We operate mostly in undeveloped areas of the world—Thailand, Liberia, the Middle East, Kenya, Nigeria, and the interior of Colombia. And we have a tough time finding even semi-skilled construction men—especially operators of heavy equipment.

In Thailand, for instance, the workers weigh only about 120 lbs. soaking wet, and they don't have the strength or the size to handle controls. In this case, we don't have much choice but to import skilled operators. But wherever possible, we try to train local workers. And it's a struggle.

As many times as we tell them to keep the rigs in gear going down a steep hill, one of them invariably

—To page 146

Circle Item No. 74—Reader Service Card

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**Germicide**  
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**BOL'TABS® TABLET  
BOWL CLEANER**  
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Stain Remover—Rust or Lime  
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Your insides feel like a  
**SAND STORM**

**YOU NEED A  
DUPOR  
AUTOMATIC  
Water-Cooled Respirator**

Sponge filter saturated in cool, clear water provides moist air for comfortable breathing. Ideal protection against dust, fumes, smoke, paint spray. Full panorama visibility. Can be worn with goggles or glasses. Work refreshed, order a water-conditioned respirator today! Sample, \$2.25 postpaid.

**H. S. COVER, Dept. 1106**  
South Bend 14, Indiana  
"Respirators for Industry  
since 1894"



Circle Item No. 75—Reader Service Card



—From page 31

kill," as he hands her a new lamp for her living room.

Door prizes can be selected for activities associated with primary accident causes such as falls, or objects that take people into traffic, or something seasonal such as a small fire extinguisher for Fire Prevention Week or a snow pusher for winter weather.

People who forget what's said in a speech even before the coffee and cookies disappear will remember the safety lesson that came with

a prize. The bait of something for nothing brings out crowds that the most cleverly worded and illustrated posters can't lure away from a TV screen.

Pa. Bell considers the few dollars spent for prizes a good investment. J. Sharp Queener of Du Pont points out that a sound off-the-job program improves on-the-job safety records. Pa. Bell is benefiting from Du Pont's experience.

A game called Dialo, based on the old Indian game of parchesi, was developed by Pa. Bell as an incentive in its school programs and family safety nights. The player spins a little arrow. Where the arrow stops on the dial determines how many spaces along the road the player can move his car. Sometimes the arrow stops on a space that says, "Take ticket." When it does, he picks up a ticket that might tell him, "You crossed the center line while going around a curve. Go back four spaces." Reports coming back to Pa. Bell indicate that parents are being influenced by children's changed attitudes, and that parents benefit directly from the game, too.

The role-playing device is used in Pa. Bell's eye protection program. They use a package called "Let's Pretend" which consists of plastic eye cups to block out all light and a number of familiar objects to be manipulated in the temporary darkness. The grim game was devised by a man who was blinded for six months in an industrial accident. He learned to tell his brown shoes from his black shoes by having one pair laced with round laces, the other with flat. He chose his blue suit because it was gabardine and felt smooth, not rough like his tan tweed.

With lessons like these burned into his memory, he made up a kit to test simple tasks such as lighting a cigarette and putting powder on a tooth brush. When people fumble the job and watch others fumble it, reaction is mixed. They laugh, but it is an uneasy laugh. One civic group took the kit into a small machine shop that had no eye protection. The owner and his supervisors played "Let's Pretend," and the next day eye protection was as much a part of the job as micrometers and calipers.

Circle Item No. 76—Reader Service Card

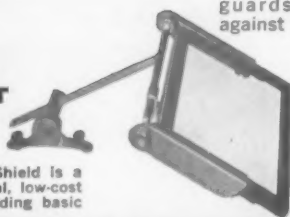


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**MAXIMUM  
visibility...  
MAXIMUM  
protection!**

The Junkin Electro-Lock Shield permits the operator to see clearly the work he is performing and at the same time protects him from severe injury or eye damage. Interlocking power and light circuits will not permit the machine to operate unless the shatter-proof Junkin Electro-Lock Shield is in complete protective position. This feature guards unthinking operators against mishap.

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SAF-SIGHT  
SHIELD**



**The Saf-Sight Shield is a simple, practical, low-cost means of providing basic protection.**

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**Weatherite SAFETY SIGNS**

**FULL HIGH BAKED ENAMEL METAL AND SYNTEX**

**EXIT**

**STOP MEN AT WORK**

**MEN WORKING**

**CAUTION**

**NO SMOKING ALLOWED**

**NO LEFT TURN**

**DANGER**

**STAIRWAY**

**FIRST AID**

**DO NOT PARK HERE**

**TAXI STAND**

**RAILROAD CROSSING**

**ONE WAY**

**HOSPITAL**

**NO ADMITTANCE TO BUSINESS**

**STOP**

**KEEP OUT**

**DETOUR**

**POOL ZONE**

**DO NOT WATCH**

**AT WORK**

**THE LIGHT MAY BLIND YOU**

**DO NOT SMOKE**

**OTHER PLACES OF CONFINEMENT**

**RAILROAD CROSSING**

**NO SMOKING**

**ONE WAY**

**Write for our new enlarged CATALOG**

**Prairie State Products Co.**

**3822 LAWRENCE AVE. CHICAGO 25, ILL.**

Circle Item No. 77—Reader Service Card



been a leader in first-aid training. Richard E. Thomas, a division plant superintendent for Pa. Bell, says when he started with Bell he was on the job one day when he was told he would be on a first aid team. Not asked—told. Mr. Thomas is trying hard to sell McKay's program to the Telephone Pioneers, who are 21-year veterans with the company. He tells Pioneer chapter representatives from all over the U. S. and Canada that safety is a natural for their community service activity. He demands, "Who is better qualified than you telephone people to talk about safety? Look at your record!"

Sam McKay has tapped an unused source of community first aid service in Philadelphia. He watched retired telephone people idling in their club room, and it bothered him to see so many energetic people with too much time on their hands. The Red Cross was asking for first aid instructors, so McKay decided to put all that talent and experience to work.

His first step was to hand-pick two former division safety supervisors for special training with the ARC. The special training qualified them to train first aid instructors—gave them the same qualifications as Red Cross field representatives. They went to work, trained 18 instructors, and now the instructors are out putting on classes for housewives, students, workers, everyone.

The most appealing part of McKay's program is Driver Education in the Primary Grades. McKay knew of the successful experiment

at the Garfield School in Phoenix, Ariz., and modeled Bell of Pa.'s program after it. The idea is to teach kids proper driving behavior before Pop corrupts them with his five-over-the-limit driving and his rolling stops.

The physical package required to equip a school district consists of six miniature cars, a training course diagram, signs and signals for the outside training course, a table top model of the training course equipped with toy cars and

signals, temporary drivers' permits for the outside course, and a written description of the program for the guidance of those giving the course. The present cost of the entire package is less than \$1,000, and that is coming down.

Indoors, the teachers take the children from a sheet-size diagram to a table top training course. When the children have demonstrated enough knowledge, they are issued drivers' permits which allow them to drive the pedal-powered Gnat

Circle Item No. 78—Reader Service Card

# NEW!



**LIGHT**—only 5½ ozs.  
**FITS ALL SIZES**—either foot  
**SLIPS ON EASILY**—stays put

## DIAMOND METATARSAL FOOT PROTECTOR

*gives added safety, deflects falling objects*

Worn with safety toe shoes, this new lightweight metatarsal foot protector affords full coverage of wearer's instep to guard against blows from falling objects. Comfortable to wear, ruggedly constructed, protector has tough outer shell of flame-resistant plastic over an aluminum plate sandwiched between two ½" layers of vinyl plastic. Steel spring slips on heel quickly, keeps unit firmly in place without restricting foot movement. Write for details and prices.

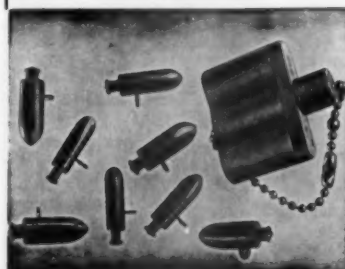
### SAFETY FIRST SUPPLY COMPANY

425 Magee Street, Pittsburgh 19, Pa.



"Last month it was his finger caught in a slide rule!"

National Safety News, November, 1959

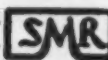


Free sample when requested  
on company stationery.

## CUT DOWN NOISE WITH THE S M R EARSTOPPER

Soft, comfortable, resilient, the SMR EAR STOPPER adjusts itself to all shapes, turns and movements of the ear canal. Tends to anchor itself in the ear. Has a long life and is reasonable in cost. Furnished in a plastic case. Forty-five cents per set in gross lots.

**SURGICAL MECHANICAL  
RESEARCH INC.**



1905 Beverly Blvd., L.A. 57, Calif.

Circle Item No. 79—Reader Service Card

## Take the hazard out of Floor Maintenance



**WITH HOLT  
EXPLOSION  
PROOF  
COMMANDER**

*Model EPC16D,  
showing handle  
in space-saving  
stowaway position.*

Holt Commander is designed expressly for safe maintenance of floors in oil refineries, atomic research plants, powder factories, and other hazardous industries. There's no outside wiring. Entire unit, from brush to handgrip, is constructed, sealed and safety-tested to prevent sparks and static that might ignite gas, dust, fumes or vapors. Static eliminator wire in brush, a Holt exclusive, even prevents shocks to operator.

With this one machine and Holt Quick-Change Attachments you do a complete floor maintenance job — polish, wax, buff, scrub, etc. Dual handles give operator better control; reduce fatigue. Made in 16 and 20" sizes. For full story write now to Dept. W-11.

**Sales  
and Service  
Centers  
in Major  
Cities**



**MANUFACTURING CO.**  
BETTER FLOOR MACHINES  
FOR MORE THAN 30 YEARS

669 - 20th St., Oakland 12, Calif., or 272 Badger Ave., Newark 8, N. J.

32

**Durable coated glass cloth  
RESISTS ACIDS and HEAT  
smooth finish is easy to clean**

**GREENWEAR**

**ANOTHER *Wheeler* EXCLUSIVE**

A new 15 oz. Green vinyl coated glass cloth! Greenwear for resistance to acids, alkalis and heat in a complete line — aprons, coats, overalls, leggings, hoods, coveralls, pants, spats, sleeves, curtains, etc. Chemically resistant stitching, heavy duty straps, snap fasteners, and fittings on all garments. Greenwear, a new modern dimension in protective apparel. See your Wheeler Dealer or write us for full details.

- Appealing color
- Good wear and fit
- Flexible fabric
- Roomy "action" garments
- Smooth, easy-to-clean finish
- High tear and tensile strength
- Coated both sides

**WHEELER PROTECTIVE APPAREL, INC.**

226 W. Huron Street

Chicago 10, Illinois

Circle Item No. 81—Reader Service Card



Mark III's on the painted course on the outside playground.

Finding a little car that would take the constant beating from hundreds of active young hands and feet was not easy. In fact, it was impossible. An \$85 miniature of an American-built "sports" car was scratched badly in the first few hours of use, and was wrecked completely in two weeks. The British Austins used by Garfield were no longer available, so McKay had to build his own. He turned his mold over to a plastics manufacturer, and now gets a one-piece fiberglass body car, with bright color all the way through, for \$130. The price can come down further when production goes up. The light weight of the fiberglass has an important advantage when it comes to storing the cars. Two twelve-year-olds can carry a car to and from storage.

On the playground course, precious driver's license in hot little fist, a child takes his turn as driver, pedestrian, and traffic officer. Violators, whether playing the role of motorist or pedestrian, are given tickets. Back inside, the child might be a judge, bailiff, lawyer, or juror. The judge hears both sides, sometimes finds the traffic officer had some facts that weren't true. The worst punishment a culprit can suffer is being benched while his classmates drive.

Society doesn't have to wait eight or nine years to start collecting dividends on this program. Conversations like this follow:

"Mom, you're supposed to hold your hand straight out for a left turn, not flop it up and down that way."

"Oh, is that so?"

"Yeah, and besides, Sergeant Hrdlicka says you're supposed to turn into the left lane after your turn, not cross over to the right lane."

"Hmmm."

It takes a selling job to persuade educators and school boards to take on extras, but there is usually a time reserved for "special projects," and it is this time the sponsor of the safety program must compete for. Pa. Bell doesn't rush this selling job. They start at the top, and with demonstrations and explanations, work down to the teacher level. When the teachers are con-

vinced, they ask for the program.

Another schoolyard demonstration for children is "Why You Shouldn't Play in the Streets." This one allows children to learn, by participation, that sometimes a driver *can't* stop in time, no matter how hard he tries.

On a flat surface 42 by 60 ft., marked to simulate a street with curbs and parked cars, children chase a ball and try to retrieve it before being "hit" by an approaching car. The first step is to have the children chant out "one, two, three, four, five" as a large clock, powered by a six-volt battery, ticks off the seconds. They learn the proper cadence so they can use it later in the "game." A cut-down hula hoop the size of an automobile tire is introduced, and the children learn it represents the wheel of a car. A child takes the hoop and makes four turns with it, marking where it stops. Boys take a tape measure and call out the distance. The instructor then explains to the group that a car traveling 20 mph. travels 29 ft. in one second—about four turns of the wheel.

Next comes the exciting part of the show. A child runs to the center of the mock-up roadway to pick up the ball while his classmates count the seconds in growing alarm. The counting breaks up into a babble of voices and screams of, "Go back!" and "Johnny got hit!"

In the same setup, a demonstration of sound perception is given. A child is blindfolded in the middle of the play road, turned around, and instructed to point toward the horn when he hears it blow. Someone then sounds a horn to the rear, front, side, and even directly overhead. The poor showing made by most subjects proves how reaction time can be lengthened even with a proper warning.

Telephone people are taking the lead in a far-reaching defensive driving program in Pennsylvania. Here again they limit their activity to getting it started, then pull out and start another program in another community. The telephone company finds a sponsor, trains instructors, gives advice, and helps with publicity.

—Turn page

## STOP FALLS

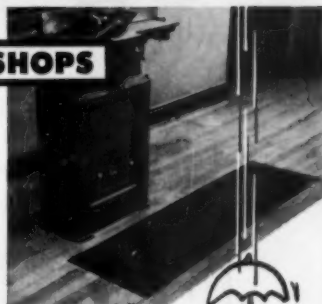
**POOLS**



**RAMPS**



**SHOPS**



...every

place

with



## FERROX

Trowel on. Dries quickly. Provides safe non-slip footing on all surfaces, wet or dry. Resists oil, chemicals, water and weather conditions. Adheres firmly to wood, concrete and metal. One gallon covers approximately 35 to 40 square feet.

**AMERICAN ABRASIVE METALS COMPANY**  
464 Coit Street, Irvington 11, New Jersey

Please send more information on Ferroxx.

Name .....

School .....

Address .....

City ..... State .....

Circle Item No. 83—Reader Service Card

## POWERFUL NEW PLUNGER CLEARS CLOGGED TOILETS in a jiffy!



Clear messy, stuffed toilets  
Cut maintenance costs with

## TOILAFLEX

Toilet ALL-ANGLE Plunger

Ordinary plungers don't seat properly. They permit compressed air and water to splash back. Thus you not only have a mess, but you lose the very pressure you need to clear the obstruction.

With "TOILAFLEX", expressly designed for toilets, no air or water can escape. The full pressure plows through the clogging mass and swishes it down. Can't miss!

Get a "TOILAFLEX" for your home too. Positive insurance against stuffed toilet.

- Double-size cup, double-pressure
- Tapered tail gives air-tight fit
- Designed to flex at any angle
- Centers itself, can't skid around

**\$265** Fully  
Guaranteed

Order from your Supplier of  
Hardware or Janitor Supplies

**THE STEVENS-BURT CO., NEW BRUNSWICK, N. J.**  
A Division of The Water Master Company

Circle Item No. 82—Reader Service Card



## SAFER HANDLING of INDUSTRIAL LIQUIDS!



Eliminate in-plant accidents caused by slick floors and spilled inflammables! This TOKHEIM Hand Pump, for use on drums or skid-tanks, has 8' hose—or spout outlet—prevents dangerous, wasteful slopping of oils and many other liquids. Speeds production. Pumps 20 gallons per 100 strokes. Ask your dealer, your Tokheim representative or write for list of liquids.



General Products Division

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DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901

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Subsidiaries: Tokheim International, A.G., Lucerne, Switzerland;  
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## NOW! BEARS THIS FAMOUS SEAL

### MONOXOR. CARBON MONOXIDE DETECTOR SET

For Safeguarding Human Life  
wherever CO Hazard may exist

For "Safety Testing" of  
Gas Burning Appliances

**\$23.60**  
FACTORY NET

Includes  
Sampler CXD,  
24 Tubes  
CC-352,  
6 Tube Caps,  
& Pocket  
Case

M-30

BACHARACH INDUSTRIAL INSTRUMENT CO., 200 N. BRADDOCK AVE., PITTSBURGH 8, PA.

Send me a copy of your MONOXOR Detector Leaflet 859D

NAME \_\_\_\_\_ POSITION \_\_\_\_\_  
COMPANY \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY AND STATE \_\_\_\_\_

Circle Item No. 85—Reader Service Card

The sponsoring organization in the community must make the actual arrangements for publicity, meeting places, and all details of actually putting the program to work.

A kit of materials to operate a defensive driving program costs a little over \$50. Included is a braking reaction timer, a decelerometer, a defensive driving booklet, portable flags on stands, a flip chart, and a supply of questionnaires. The reaction timer, which is hung on the front bumper, fires a .22 cartridge loaded with yellow chalk as a signal to the driver to stop, then when he hits the brake pedal, it fires another. The act of measuring the yawning distance between the two telltale yellow spots cures overconfident drivers of boasting they can stop on a dime. That distance, plus the distance to the stopped car itself, equals total stopping distance.

The decelerometer measures smoothness in stopping. It consists of a slotted box which holds cylinders of various heights. The tallest cylinder topples in its slot first, then the next tallest. The number of cylinders left standing after a stop in the measured distance between flags gives the smooth stopping score.

The entire kit fits into a container about the size of a large tackle box. Kits circulate constantly from the company to the communities putting on programs and back to the company. They are used over and over again.

The telephone company spends time for this organizational work and money for the equipment used. In return, they get favorable publicity from the cooperating organizations, stories in local newspapers, interviews on local broadcasting stations, and material for local newspaper ads. Less immediate but no less real returns on the investment are safer communities for telephone employees to live in and a customer feeling that the telephone company, that faceless voice that never gets more human than "Special operator at \_\_\_\_\_, what number were you calling, please?" is actually a good citizen and a good neighbor.

Sam McKay says any industry can cash in on these same good will dividends.



## LP-Gas at Your Service

—From page 33

Sizes as large as 150,000 gal. were in use 25 years ago, not only in refinery service but in at least one gas utility plant as well. The size of these large field-erected cylindrical tanks was limited only by materials available, construction techniques and economics.

Other tank shapes were also developed for pressure storage. These new tank shapes made possible more efficient and economical use of material and permitted economical building of larger pressure vessels. The principal types today are the spheroid and sphere.

Examples of riveted tanks of these types are still in use today, but widespread construction came later with the improvement of welding techniques.

A spheroid is a vessel especially developed to contain moderate pressures and is built in sizes up to 5,000,000 gal. at 20 psig. It has been used principally to store natural gasoline and other hydrocarbons with moderate vapor pressures. But more and more spheroids store butane by partially refrigerating or chilling the butane to keep the vapor pressure within the tank working pressure limit.

The spherical pressure vessel has found common application where higher storage pressures are required. The spherical shape has a minimum wall thickness for pressure storage and permits the most efficient use of material, since surface area is at a minimum per unit of storage volume.

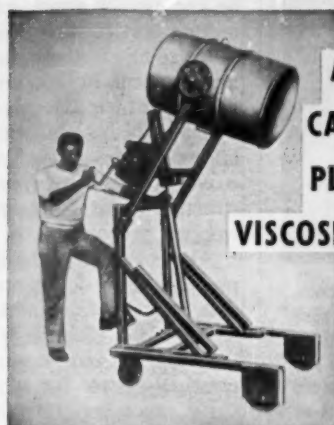
Spheres constructed in accordance with the ASME Code capable of holding 50 psig. have been built in sizes up to 1,250,000 gal. capacity and in smaller sizes for higher pressures.

Modern field construction techniques, including automatic welding, X-ray inspection and heat treating, have permitted erection of spheres in increasingly larger sizes at pressures required for LP-Gas storage.

Automatic welding produces more uniform welds at greater speeds, improving joint efficiency. X-ray inspection can now be carried out in the field and, as a result, higher joint factors can be used in

Circle Item No. 86—Reader Service Card

## CONTROLLED POURING



OF

ACIDS

CAUSTICS

PLASTICS

VISCOSE MATERIALS

with the Model CP-1 Sterling Hydraulic Drum Lift. Be assured of self-locking and absolute control at any pouring angle.

Lifting capacity 750 lbs. Lifting height 72". For complete details and specification on the CP-1 model and other model Sterling Hydraulic Drum Lifts, write: Dept. NSN-11.

**STERLING, FLEISCHMAN COMPANY**  
P. O. BOX 94 BROOMALL, PA.

"ELSIE—  
HAVE YOU  
HEARD?  
ICE-FOE NOW  
HAS  
**NOXIDE\***!"

*the original*  
**ice-foe**

\*prevents rust  
and corrosion  
because of the new  
additive—  
**NOXIDE!**  
melts ice and snow  
faster than ever  
thanks to powerful  
Thermolyte!

Ice-Foe is ready to use  
in economical  
100-pound drums.  
Contact your sanitary  
supply jobber—or

**WALTON-MARCH**  
Highland Park, Ill.



## A "cloudburst" of safety!

Volatile chemicals and propellants can cause serious accidents—but serious injuries need not result if water irrigation is immediately available! Haws Decontamination Booth provides the "cloudburst" that rapidly rids the body of harmful irritants. Victims walk on the feet treadle and are instantly bathed in water from a dozen nozzles. Haws Eye-Face Wash is simultaneously activated—a pressure controlled unit with a perforated face-spray ring and twin eye-wash heads. Booth is acid resisting fiberglass plastic, and is delivered complete, ready for tie-in to existing facilities. Write for details on the full line of models.

## HAWS DECONTAMINATION BOOTH



MODEL 8600



**HAWS DRINKING FAUCET CO.**  
1443 FOURTH STREET • BERKELEY 10, CALIF.  
EXPORT DEPARTMENT: 19 Columbus Avenue  
San Francisco 11, California, U.S.A.

Circle Item No. 88—Reader Service Card

design. Field heat treating has been perfected, so field-erected tanks can be successfully stress relieved, permitting greater plate thicknesses.

In addition, there has been an improvement in know-how in application of steels to pressure vessel design. The combination of these improvements in design and construction techniques permits construction of larger tanks for higher working pressures.

Along with the development of pressure vessel design and construction, the ASME Unfired Pressure Vessel Code (Section VIII) covering design and construction of pressure vessels for working pressures exceeding 15 psig, and the API Low Pressure Storage Tank Code 620 covering vessels in the 0.5 to 15 psig working pressure range, have been developed to reflect the experience and best practices devised through the years.

These codes make no attempt to limit the size of vessels, but more properly prescribe the limits within which various materials should be used. The tank designer has the freedom to develop economical storage within the physical limitations of materials and space available.

Throughout the petroleum industry thousands of large volume containers have been built for storage of anhydrous ammonia, LP-Gas and other hydrocarbons with vapor pressures above atmospheric pressure.

In the past decade dozens of welded spheres in various sizes up to 630,000 gal., and 75 psig working pressure have been installed, in some cases partially refrigerated. Scores of 63,000-gal. horizontal, welded, cylindrical tanks for 220 psig working pressure for storage of LP-Gas have been erected.

With the fast growth of the LP-Gas market, use of larger storage vessels has been accelerating rapidly. Other companies have recently built propane storage spheres for 235 psig working pressure in sizes as large as 290,000 gal. each and horizontal tanks in sizes of 214,000 gal. for the same working pressure.

With increasing use of refrigerated storage, LP-Gas has more recently been stored at atmospheric pressure in volumes of 1,200,000 gal. per tank. The petroleum and chemical industries have led the way

## EASY ROLLING SAFE TO USE!



## BALLYMORE Safety-Step LADDERS



### PYRAMID DESIGN

automatically centers the body, and automatically locks to the floor. An exclusive Ballymore design.



With and without handrails, all-welded construction... your choice of steel, or aluminum.

For complete information, write:  
**BALLYMORE COMPANY**  
WEST CHESTER 17, PA.

## BALLYMORE

EQUIPMENT FOR  
ABOVE-FLOOR SAFETY

LOOK FOR  
THIS LABEL  
TO BE SURE  
IT'S THE BEST



Circle Item No. 89—Reader Service Card  
National Safety News, November, 1959

**SANI-DRI ends woes!****SANI-DRI ELECTRIC HAND DRYERS**

- ★ Automatic 24 Hr. Service
- ★ Cuts Maintenance Costs 85%
- ★ Eliminates All Towel Costs

**NEW!**

Faster Drying!  
 Abuse-Proof  
 Aluminum  
 Nozzle and  
 Push Bar!

**Write Today!**

FOR NEW BROCHURE  
 AND PRICE LIST

THE CHICAGO HARDWARE FOUNDRY CO.  
 10110 Commonwealth Ave. • North Chicago, Ill.

**THE POSITIVE  
 LADDER SAFETY DEVICE  
 LOCKS-IN-A-NOTCH**


**Prevents death  
 and injuries  
 from falling.**

If climber starts to fall, device locks in a deep notch on carrier rail and limits fall to approximately 6 inches — distance between notches.

**LOCKS AUTOMATICALLY and  
 INSTANTLY—HOLDS SECURELY**

Will catch and hold workman if he starts to fall, even if unconscious. Cannot slip on down ladder. Requires no attention from climber; he climbs in normal manner. Inexpensive. Easy to install; 3 men can clamp it to ordinary ladder in few hours. Clamps to any rung ladder, peg ladder, pole or framework. No welding or cutting. Notched rail hot-dipped galvanized. Entire equipment rust and corrosion proof. Can be kept free of ice by applying heat inside the carrier rail. In use approx. 11 years. Approved by Safety Engineers and Govt. Agencies throughout country. Patented. Manufactured only by

**SAFETY TOWER LADDER CO.**  
 1024 Burbank Blvd., P.O. Box 1032  
 BURBANK, CALIFORNIA

Circle Item No. 91—Reader Service Card  
**National Safety News, November, 1959**

in making use of larger and larger storage vessels, pressure and non-pressure types, as materials, design and construction techniques have improved, to realize the benefits of economy and safety.

The safety record of these large storage vessels is excellent. Most of these vessels are still in service at the original pressures for which they were designed.

A part of the safety record of large tanks can be attributed to reduction in fittings and joints, where leaks might develop. Larger volumes of liquid in one tank are also more stable in temperature. The stored product pressure responds less readily to atmospheric temperature fluctuations, reducing the possibility of venting combustible vapors.

The petroleum industry considers the use of large tanks for the storage of LP-Gas to be a safe storage method, when normal safety measures are observed. These measures include adequate design with proper materials, inspection of welding, adequate pressure relieving devices, use of welded piping, periodic inspection of valves, fittings and pipe joints, and maintenance of a good coat of light colored paint to reduce tank temperature and pressure.

Large storage tanks not only cost less, but also require less land, have fewer connections and need less piping, valves and fittings per unit of capacity.

The petroleum industry has learned that through judicious design and application of materials and methods as they are developed, it can economically use larger and larger pressure vessels for LP-Gas storage at refineries and terminals with no sacrifice in safety.

Principal criteria used to study a storage proposal—safety, past service experience, design considerations and economy—indicate there is no justification for an arbitrary limitation on storage tank size.

If sound design is used, based on the accumulated experience represented by vessel design codes, the designer should be free to develop the most economical and practical tank size to fit the requirements of each particular storage proposal.

Tanks of 30,000-gal. capacity and smaller will continue to be required, but there is also a place for larger tanks in the industry.

**THE NEWEST LOOK  
 FIRST AID KITS**


Now for the first time, a round First Aid Kit that is **ROUND** in every dimension! !

Not only are the corners **ROUND**, but so are the edges—there are absolutely no square corners or sharp edges on the new **HALCO Unit-Style Kits**.

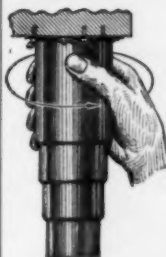
The bottom sections are drawn, thus no welded corners, assuring maximum dustproof, moistureproof qualities.

Write today for full particulars and new descriptive literature.

**A. E. HALPERIN CO., INC.**

75 NORTHAMPTON ST.  
 BOSTON 18, MASS.

**KIT MANUFACTURERS SINCE 1922**

**Guide Pin Covers**

**PROTECT OPERATOR  
 AND GUIDE PINS**

Effectively guard against injury to operator, die and press on operations where bushings leave the guide pins. Protect pins and bushings from chips and dirt when entire pin and bushing are covered. Inexpensive, easy to attach.

Felt Oiler Ring in top units provides **POSITIVE** lubrication.



**WRITE TODAY FOR DESCRIPTIVE FOLDER AND PRICE LIST**

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 Address \_\_\_\_\_  
 Title \_\_\_\_\_

**Wiesman Manufacturing Co.**

31 South St. Clair Street • Dayton 2, Ohio

Circle Item No. 93—Reader Service Card



*Another  
Finnell First!*

**CUSTOMER / DESIGNED**

## BATTERY-POWERED SCRUBBER-VAC

in two sizes

MARK  
20

MARK  
26

*for quiet, efficient, continuous scrubbing*

Five years of research, engineering, and on-the-job testing of various pilot models have enabled Finnell to offer a battery-powered combination machine that is truly customer/designed! Incorporating the features most wanted by a cross section of business and industry, the unit performs quietly . . . has compensated motor . . . specially designed battery rack to eliminate lifting out batteries . . . simplified controls to assure greater ease of operation . . . accessibility of all parts to permit safe, easy inspection and maintenance . . . sturdy gear system to reduce maintenance costs. And like all Finnell Combination Machines, the unit applies cleanser, scrubs, and picks up—in one operation. Independence from power lines enables the machine to go wherever the operator guides it . . . scrubbing continuously. The Mark 20 cleans up to 15,000 sq. ft. per hour; the Mark 26, up to 21,600 sq. ft. per hour. Brushes are counterrotating to eliminate torque. Each unit is powered by four standard 6-volt, 25-plate, 210-ampere batteries which permit up to eight hours of operation without recharging. Finnell also makes battery-powered combination machines in larger sizes.



No switches to set for fast or slow — pressure of hand on clutch lever adjusts speed (up to 180 lineal fpm). Variable brush pressure to meet specific needs.

A compact battery charger is included with each unit as standard equipment. Batteries can be charged on the machine or rolled out on a charger bench.



For consultation or literature, phone or write nearest Finnell Branch or Finnell System, Inc., 2211 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

**FINNELL SYSTEM, INC.**

*Originators of Power Scrubbing and Polishing Machines*



BRANCHES  
IN ALL  
PRINCIPAL  
CITIES



# New SAFETY EQUIPMENT

Product announcements in this section are reviewed for compliance with the advertising policy of the NATIONAL SAFETY NEWS. Inclusion should not, however, be construed as endorsement or approval by the National Safety Council.



## Facepiece

The Clearvue is a facepiece with a large, single lens. The facepiece for gas masks, hose masks, airline respirators, and demand breathing apparatus eliminates fogging of the lens and has speaking diaphragm and built-in accommodation for prescription glasses.

The "wrap around" lens assembly can be replaced and formed wire fasteners removed and re-used for installation of the new lens. Uniform tension of the fasteners maintains a seal around the lens periphery and prevents loosening or shifting.

**Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa. (Item 301)**

## Emergency Exit Safety Locks

Recently developed heavy-duty door locks reduce the danger of being locked in compartments and hazardous areas.

The locks are suitable for cold storage and other rooms, and for truck body doors. An inside control knob permits immediate release, if a person is trapped. These locks can be furnished in malleable iron or forged brass with cadmium or chrome plate.

**Prairie State Products, 3822 Lawrence Ave., Chicago 25, Ill. (Item 302)**



## Fire Extinguishing System

This system is designed for small, hard-to-protect areas in warehouses, industrial plants, laboratories, and small hazardous areas.

The system can be installed on upper floors of buildings where larger, low-pressure storage tanks cannot be installed physically and in other areas of limited space.

It uses high-pressure liquid carbon dioxide in stored cylinders. A control mechanism with a continuous monitoring device assures the system is operable at all times.

The system operates instantly, actuated by signals from fire-detection devices, smoke detectors, flame detectors or other sources, and is available with automatic, manual-automatic, or straight manual actuation methods. All these actuation methods include manual pushbutton stations.

It will automatically sound a pre-discharge alarm, release doors and windows, shut off fans, motors and machinery.

**Cardox—Div. of Chemetron Corp., 840 N. Michigan Ave., Chicago 1, Ill. (Item 303)**



## Electric Safety Lock

The Lance Lock has been designed as a failsafe device to make certain that electrically-powered or operated machines, apparatus or equipment cannot be started unless the safety door or guard is automatically locked in place.

The lock consists of a split transformer, one-half of which is fastened to the machine and the other to the access door, operating lever, handle or other closing means. The machine-starting switch in the main circuit can be closed only when both halves of the transformer are properly mated.

The guard or door cannot be opened until the machine has been switched off.

When the two transformer halves are brought together exactly in the proper position and the starting switch turned on, the pivoted half of the transformer is attracted to the other half, mechanically locking both together so no lateral movement is possible. This allows enough current to be generated in the secondary winding to close the machine power circuit.

Applications are on centrifuges, presses, industrial material handling systems, such as hoists and elevators, crushing machinery, high-voltage systems.

**Lindly & Co., Inc., 248 Herricks Rd., Mineola, L. I., N. Y. (Item 304)**

For More Information—Circle Item Number on Reader Service Postcard



### Safety Face Shields

These shields combine vision with ventilation. They are designed for industrial workers requiring visibility and face protection while working in heated areas. The "Kool-Vent" shield incorporates an optically correct acetate window in a fine metal 24-mesh screen, 8-in. by 11½-in.

The shield is held before the face by an adjustable fiber headband, enabling use with or without regular prescription eyeglasses. Clear, green or aluminized acetate windows are available.

**American Optical Co., Southbridge, Mass. (Item 305)**



### Oil-Resistant Gloves

Terry cloth gloves are oil-resistant and retain their grip when wearers handle oiled or greased material.

Oilmacs have been treated to prevent the loop-pile fabric from absorbing oil. They

do not become heavy and cumbersome and do not become slippery from oil.

Thickness and flexibility of the material cushions the hands against sharp edges, making the gloves useful in handling metal sheets and strip oiled for fabricating. The glove also cushions against rough surfaces and bruising blows.

The glove fabric is impregnated with an oil-repelling chemical. As a result, they can be dry-cleaned repeatedly and retain oil-repellant characteristics. Oilmacs are white reversible gloves with red knit wrists for easy identification. They are available in heavy-duty and light-duty types.

**Jomac, Inc., 6128 N. Woodstock, Philadelphia 38, Pa. (Item 306)**

### Portable Air/Foam Systems

Air/foam equipment for extinguishing dangerous flammable liquid fires now can be installed on municipal, volunteer and industrial fire trucks.

Foam Paks are available in sizes for ¾-in. booster hose or 2½-in. hose lines. Each Pak is a complete air/foam system. Components include an Underwriters'-approved, lightweight, aluminum-constructed playpipe (20, 40, 60 or 120 gpm. size), a pick-up tube, and a supply of 3 per cent high expansion foam compound.

Operators attach the water line to the playpipe and insert a pick-up tube in the compound container. Water pressure through the playpipe creates a jet action which draws the foam compound into the pick-up tube.

Water and the high-expansion compound combine in automatically metered rates to deliver an air foam blanket in seconds. The blanket can also shield victims being rescued, prevent fire from spreading from building to building, and protect merchandise against heat, fumes and smoke.

**Fyr-Fyter Co., 221 Crane St., Dayton, Ohio (Item 307)**



### Safety Hats and Caps

SuperGlas Safety hats and caps have safety, weathering, and abrasion characteristics.

teristics.

The safety feature is a single injection-molded polyethylene suspension unit with a "fixed" safety factor and a 1¼-in. clearance from the crown of the hat or cap . . . and an adjustable clearance laced to fit the individual user. The suspension, including the headband is rigged for comfort, rugged for safety and cleanly designed.

The polyethylene suspension needs occasional replacement of the headband and sweatband and is interchangeable in all styles of the manufacturer's hats and caps.

Another safety factor is an added "veil" of fine-spun glass fibers near the outer surface of the shell. This results in a thin layer of resin and glass fibers close to the surface . . . increasing the life of the shell and making color more lasting and the surface more resistant to weathering and abrasion.

**Fibre-Metal Prod. Co., 5th & Tilghman Sts., Chester, Pa. (Item 308)**



### Flame-Proof Nylon Fabric

This flameproof vinyl-coated nylon tarpaulin fabric reduces fire dangers while contributing to safer working conditions. Herculite 20 combines high-tear strength, durability, light weight and daylight transmission with fire resistance vital in construction work where hot sparks can cause loss of life, material, time and money.

In field tests at two new power plants, the materials were used for a variety of coverings, including protection against entry of moisture, dirt and dust.

Six sunproof colors are available: red, yellow, green, blue, gray and white. They retain appearance after long periods in sun or cold.

Windbreakers, building material covers, pit coverings, winter concrete curing covers, temporary store-rooms and shelters are several uses of this fabric.

**Herculite Protective Fabrics, 125 Sussex Ave., Newark 3, N. J. (Item 309)**

For More Information—Circle Item Number on Reader Service Postcard

## Analysis Unit

The L-75D Electrometer Analysis Unit consists of an ionization chamber and quartz fiber electrometer powered by a self-contained transistorized power supply.

Also available in kit form, Model L-75K includes light source, sample holders, filters, planchets, etc., for measurement of radioactivity, including: laboratory analysis; fallout measurements; air, food and water contamination checks; A. E. C. teachers' training program; radioisotopes comparison; tracer studies.

**Landsverk Electrometer Co., 641 Sonora Ave., Glendale 1, Calif. (Item 310)**



## Portable Screen

This four-sided portable screen is useful in the welding industry and in fields demanding complete

enclosure.

The "Four-some" encloses a job. It is constructed of 1-inch tubular steel with a durable rustproof black oxide finish. The slip-joint construction eases assembly. It is light and folds for storage or removal.

The curtain is available in three materials: standard 12-oz. duck, neoprene-coated glass fiber and aluminized asbestos. The asbestos offers protection against radiant heat, because it protects by reflection.

The screen also is available with heavy-duty rubber-wheel casters where greater mobility is necessary.

**Singer Glove Mfg. Co., 860 W. Weed St., Chicago 22, Ill. (Item 311)**



## Safety Glasses

These safety glasses have a patented bridge design that fits 95

per cent of all faces. They have been designed for a small plant eye-protection program without large inventory and individual fitting.

Nose pads and rounded universal bridge of these safety glasses form a broad, continuous bearing surface. This distributes the weight of the glasses and assures comfort.

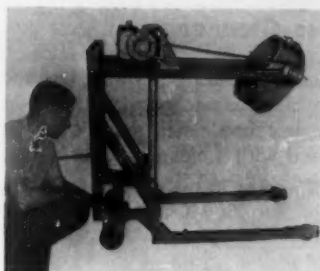
Correctly-fitted glasses can be supplied on short notice from a small inventory, avoiding lost production time from accidents, carelessness and loss of glasses.

The glasses are equal in style to streetwear glasses, with sturdy, flesh-colored plastic frames and plastic-cable or metal spatula temples. Two lens sizes in F-7 shape provide wide peripheral vision and protection.

**Willson Prod., Div., Ray-O-Vac Co., 2nd & Washington St., Reading, Pa. (Item 312)**

For More Information—Circle Item Number on Reader Service Postcard

National Safety News, November, 1959



## Drum Lift

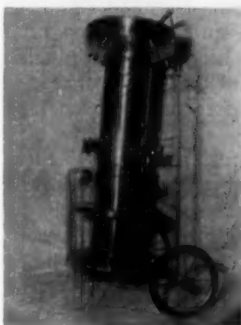
Model DL-1 Drum Lift is useful where there is little clearance beneath the receiving

vessel, permitting the legs of the unit to go under equipment mounted on supports close to the floor.

Front wheels are 4 in. in diameter, requiring a minimum of clearance. This enables drum loads of materials to be brought up to the receiving equipment for the emptying of contents.

Rear casters are equipped with 6-in.-diameter wheels for moving loaded drums. The unit is equipped with controlled pouring gear, enabling the operator to empty dangerous or hazardous materials from a position away from the pouring operation.

**Sterling Fleischman Co., P. O. Box 94, Broomall, Pa. (Item 313)**

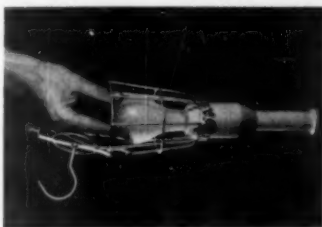


## Shower Demonstrator

A working unit, shorter and lighter than the 170-lb. Multi-Person Shower Column, is available for demonstrations.

As much as possible of the 6-ft.-high, 10-in.-diameter steel column has been eliminated, but the five latest design shower heads and soap tray, and the five sets of water control valves and drain are as furnished on standard showers. Height of the demonstrator is 3 ft., and its weight is 26 lbs.

**Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee 1, Wis. (Item 314)**



## Portable Lamp Guard

A wire guard for portable lamps need not be removed to change

bulbs. The end swings open. No tool is required to release the end, because an upset thumb screw holds the guard, when closed.

The hook is located in the center of the guard end. The end cover is strongly constructed for protection and holding the swivel hook. The wire is heavy-gage cadmium-plated.

**Ericson Mfg. Co., 1660 Hayden Ave., Cleveland 12, Ohio (Item 315)**



## Glass Cleaner

SI-BRAC Glass Cleaner (Concentrate) may be used for cleaning lenses of eyeglasses and goggles and other glass surfaces. The 8-ounce bottle will make one gallon of cleaner, to be used with a clean cloth or paper.

**Carhoff Co., 11706 Kinsman Road, Cleveland 20, Ohio (Item 316)**



## Face Shield

A safety helmet with a combination acetate face-protector and vinyl hood and bib offers top-of-head, full-face and chin protection to a person working with flying particles such as sparks, grain, feed, seed, dust, powder and chips, chemicals and paints.

The interchangeable headgear is made of lightweight plastic with aluminum spring pivots on each side to give even tension. The headband is adjustable for marked sizes of 6 to 8, and the face protector is made of select optical plastic free of distortion, and spark and fire resistant.

Plastic beading protects the wearer from rough edges of the shield. The hood and bib are snapped into the top and bottom of the face protector by plastic bands equipped with snap buttons. The entire unit weighs less than seven ounces and is available with white or black unbreakable headgear.

**Paulson Mfg. Corp., Fallbrook, Calif. (Item 317)**



## Hose-Horn Kit

A new hose and discharge horn assembly is available for 10, 15 and 20-lb. carbon dioxide

extinguishers now in use. Replacement of older hose-horn assemblies with this equipment will upgrade the fire-extinguishing ability of the older portables equal to UL ratings of 8 B:C, 10 B:C, and 12 B:C, respectively—for the 15 and 20-lb. models, the highest ratings for each capacity.

No adapters or special equipment are required. The old hose is unscrewed and replaced with the new assembly. Existing wall brackets can be re-used after insertion of the new hose-horn.

**Walter Kidde & Co., Inc., 145 Main St., Belleville 9, N. J. (Item 318)**



## First-Aid Kit

Addition of a C-Thru window in the cover of first-aid kits makes possible the effective and rapid inventory surveillance of first-aid supplies. The new kits are designed for hanging on the wall, and can be removed for carrying to required areas.

**Davis Emergency Equip. Co., 45 Halleck St., Newark 4, N. J. (Item 319)**

## Aluminized Asbestos Cloth

Aluminized Asbestos Cloth combats discomfort of radiant heat and improves worker efficiency and protection in steel mills and other high-temperature work places.

Aluminum foil 0.0004-in. thick has been laminated with a heat-resistant adhesive to asbestos cloth. This combination makes a material that is more than 90 per cent effective in reflecting radiant heat.

Aluminized asbestos cloth, which retains strength at radiant temperatures up to 1400 F, is suitable for blankets, shields, hoods, covers and curtains.

And in tape form, it is adaptable as an outer-wrap for pipelines, because of low maintenance cost, protection against flame and radiant heat, and neat appearance.

**Johns-Manville, 22 East 40th St., New York 16, N. Y. (Item 320)**



## Dynamometer

This Dynamometer checks safety factors, as well as the lifting power of cranes. The quantity of the large steel castings shown in the suspended drum can be varied to suit needs. The

pickup is rapid, providing an instantaneous reading directly in pounds.

The size of the Dynamometer, its ruggedness and accuracy make it useful for production-line testing. The model shown has a 5-in. diameter dial and will measure loads up to 10,000 lbs.

Twelve other capacities range from a low of 0-500 lbs. through 0-100,000 lbs.

Maximum indicators and attachment shackles are standard. By suitable fixtures, loads can also be checked in compression or torque.

**W. C. Dillon & Co., Inc., 14620 Keswick St., Van Nuys, Calif. (Item 321)**

For More Information—Circle Item Number on Reader Service Postcard





### Welding Helmet Lift Front Retainer

A lift front plate retainer molded of rugged, nylon plastic features infra-red resistance and will hold welding, safety, magnifier and cover glass plates.

In addition to its large plate capacity, the new retainer offers plate retention with a new spring system. Plate changing is simple. The retaining spring is accessible and snaps out, as desired. The lift part uses coil springs to maintain a firm open position, closing positively to insure against light leaks. By adjusting two screws, plate retainers can be interchanged. The retainer is now supplied on all the manufacturer's curved front fiber and glass fiber welding helmets.

**Sellstrom Mfg. Co., 222 S. Hicks Road, Palatine, Ill. (Item 322)**



### All-Filter Dust Mask

The mask is the filtering area in this lightweight, urethane filter respirator. The Resp-R-Aid is molded in one piece of plastic foam and has a functional filtering area more than double that of most other masks. The increased filtering area reduces inhalation resistance, and the special urethane construction filters out minute particles.

Resp-R-Aid consists of a one-piece urethane filter, a plastic chassis housing an inhale valve and two exhale valves, and an adjustable neckband fastened to a plastic retaining band.

The filter can be washed and re-used, is non-allergenic, doesn't absorb odors and will not mildew or deteriorate. It's available in several colors.

**Watchmoke Optical Co., Inc., 232 W. Exchange St., Providence 3, R. I. (Item 323)**



### Air Sampler

This sampler uses filter papers to detect and measure airborne pollutant particulate matter of possible hazard to personnel. The device is of interest to industrial and state and local government health authorities concerned with combatting air pollution. The sampler may be used for indoor or outdoor sampling, and for mobile or fixed position operation.

It uses a turbine-type blower that inhales an entire area, accurately sampling the atmosphere for particulate matter as small as 1/100th of a micron in diameter. The standard unit uses a filter paper about 4 in. in diameter. Larger sizes and adapters are also available.

Applications are for detection of radioactive particles, smoke and smog, for atmospheric studies by weather services, for detection of mine hazards, and factory health hazards, and in nuclear research, rocket and missile fuel development.

**The Staplex Co., 777 5th Avenue, Brooklyn, N. Y. (Item 324)**



### Portable Escape Ladder

Ladder-Scape is a portable, all-steel construction escape ladder. Anchored securely by steel hooks, the device makes safe escape possible in seconds. It extends 14½ or 25 ft. to the ground, and is built of electroplated SAE 1020 cold-finished steel with lab-proven tensile strength of 75,000 psi.

The ladder will carry 750 lbs. and can be permanently installed, if desired. It can be used portably and folded into a package measuring 14 by 10 by 5 in. Ladder-Scape is rustproof, weather resistant, and 100 per cent fireproof, and the hinge bolts are made of aircraft quality alloy 4140 steel. The anchoring device is structurally sound, and the unique design of the square ladder rungs make descent of the escapee easier and safer.

**Oak Distributing Co., 2217 W. 135th Place, Blue Island, Ill. (Item 325)**



### Ice-Melting Compound

Noxide, preventing rust and corrosion of ferrous metals, has been added to Ice-Foe. Noxide chemically minimizes dangerous oxidation and electrolytic replacement.

Tests on Ice-Foe have proved the product melts ice and snow up to 30 times faster than rock salt. This compound is soluble, and leaves no residue, rings on sidewalks or driveways, and cannot be tracked into offices, plants or stores. It is non-toxic and has no damaging effect on vegetation, shoes, tires, asphalt or concrete.

**Walton-March, 1592 Deerfield Rd., Highland Park, Ill. (Item 326)**

For More Information—Circle Item Number on Reader Service Postcard



### Air-Conditioned Helmet

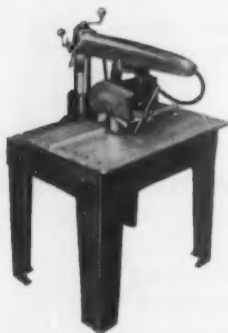
This air-conditioned helmet, the "Whitecap," will be useful in agriculture, construction, and open-pit mining. It cools and dries the air,

and filters out dust, pollen, insects and other foreign materials. Inside the helmet, cool, clean air circulates around the head and face of the wearer.

The glass fiber helmet receives its cool air from an electric refrigeration unit by a hose long enough to give the driver freedom of movement. The small electric motor connects to standard ignition system. The entire unit can be moved from one piece of equipment to another.

Persons sensitive to air-borne particles will appreciate the ability of the Whitecap unit to remove foreign materials from air. It's also valuable in humid areas, because the system effectively removes excess moisture from the air by condensation on the cooling coils.

**Jamison Laboratories, Inc., 2200 Colorado Ave., Santa Monica, Calif. (Item 327)**



### Radial-Arm Machine

A commercial model Radial-Arm Machine, designed for builders, cabinet makers, contractors, light production and schools, is designated as Model "1030."

The principal feature of the model is the new totally enclosed, fan cooled, direct-drive

motor. The flat bottom design of the new motor permits a 10-inch saw to cut three inches deep while delivering three horsepower at the cutting spindle. Because of a new yoke design, the motor can be tilted a full 360 degrees.

As an integrated part of the motor, the "1030" has a built-in electro-mechanical brake which stops a 10-inch blade within 8 seconds after power shut-off, thereby assuring greater operator safety and facilitating quicker changeover in cutting setups. Other changes include: A dual arbor motor shaft that permits the use of right-handed and left-handed rotation cutting tools, a calibrated scale for cut-off work, a relocated cam-type starting switch which actuates in any direction, and new machinery grey paint contrasting to the red safety control knobs.

**AMF DeWalt, Dept. "M", Lancaster, Pa. (Item 328)**

For More Information—Circle Item Number on Reader Service Postcard

### Germicidal Detergent

"Germerase" costs less than ordinary scrub soap and is a super-concentrated germicidal-general purpose cleaner. It can be used in dilutions as little as 256 to 1, and is both germicidal and fungicidal, and contains no skin irritants.

Suggested uses are: Floor and wall maintenance—general disinfection of hospitals—space deodorant spray in hotels—cleaner and deodorizer in critical areas—drug and food processing plants.

Germerase has a phenol co-efficient of 40 against staphylococcus, in use dilution. Mopped floors provide a pro-longed residual bacteriocidal action which reduces bacteria count of air borne germs and contamination by foot traffic.

**Horizon Industries, 400 Upper Midwest Bldg., Minneapolis 1, Minn. (Item 329)**



### Safety Socks

These socks are cushioned throughout for safety and comfort. They are all-cotton, two thread and sanitized for hygienic freshness. The socks are laboratory tested and approved odor resistant and inhibit the

growth of germs.

The socks will be especially helpful and valuable when worn with safety shoes. They will be useful in every industry, and particularly desirable for workers who spend long periods of time on their feet.

**Alden Mills Inc., 350 5th Ave., New York, N. Y. (Item 330)**



### Safety Gloves

Four new types of safety gloves for light welding work and general industrial work requiring some safety protection

are now available. Type E-GR is a chrome tanned, green cowhide glove with a full gauntlet for light welding where protection of the hand, wrist and lower arm is necessary. Type D-SS is a combination light-work, light-welding glove. It is economical and made of chrome tanned cowhide with reinforcements at the gauntlet seam, palm seam and thumb crotch for added strength and protection.

Two other gloves available are Type AR-1, a high grade heat-resistant green leather welder's mitten designed to allow complete freedom of movement for the thumb and index finger, and Type GR-SS, a flexible, driver style glove of green chrome tanned leather for miscellaneous work where light protection is required.

**Air Reduction Sales Co. Div. Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y. (Item 331)**



### Eyeshade Spec

Elimination of overhead glare, combined with

style and comfort, makes the "Eyeshade Spec" suitable for eye protection where overhead lighting creates a problem. This eyeshade shades the eyes from above, while the one-piece optical plastic lens gives protection from impact.

For More Information—Circle Item Number on Reader Service Postcard

## NEWS ITEMS

### R. D. Werner Co., Inc.

Robert F. Kell has been appointed sales promotion and advertising manager for this Greenville, Pa., manufacturer of aluminum lighters, staging, scaffolding.

Kell will direct the sales promotion and advertising activities of the Industrial and End Products Divisions. He was previously with Harvell Mfg. Corp.



### Federal Sign and Signal Corp.

The general offices and Chicago production operations of this producer of vehicle and industrial emergency lights have been moved into a modern one-story plant in Blue Island, Ill.

The plant contains extensive up-to-date facilities

for design and manufacture of audible and visual signals for industry and government. One plant feature is an "anechoic chamber," reputed to be the largest in the signal industry. The chamber (illustrated) is designed to test all types of signals.

The room has walls, ceiling and floor covered with wedges of Fiberglas sound-absorbing material. With all sound and echoes eliminated, the chamber is said to be one of the quietest rooms on earth.

### Colorado Fuel and Iron Corp.

George C. Jennings has been named Wire Rope Sales Manager. He will be located at the company's Palmer, Mass., plant. He was formerly the company's New York District Sales Manager and has been with the company since 1946.



Robert A. Cline

### Kidde Ultrasonic & Detection Alarms, Inc.

Robert A. Cline has been named staff assistant to Paul W. Eberhardt, vice president of this Clifton, N. J., subsidiary of Walter Kidde and Company.

Cline will be responsible for coordination of research and development, new products, sales, sales promotion,

sales research and engineering.

### Fyr-Fyter Co.

C. T. DuBreuil has been named vice-president and chief engineer, and will be in charge of the newly-established Central Engineering Department at the Newark, N. J., plant. Prior to his appointment, he directed sales of the company's lines of automatic sprinkler, carbon dioxide, dry chemical and foam fire protection systems.

He will be responsible for research and development, product engineering and system engineering for the company's line of portable and wheeled fire extinguishers, fixed fire protection and fire alarm systems and other products.



### Lester L. Brossard Co.

This Chicago supplier of industrial safety equipment is now marketing several industrial skin preparations made from the original John H. Breck formulas.

The preparations prevent industrial dermatitis. One of the preparations is an oil-resistant type of protective cream that covers the site of application with an invisible film resistant to oils, dust, greases and grimes.



**NEW!**



**PORTABLE SINGER SCREEN**

**NOW IN 3 CURTAIN MATERIALS:**

- ✓ 12 oz. DUCK — fire resistant.
- ✓ NEO-WELD — yellow neoprene-coated fiber glass. Gives greater protection and longer service.
- ✓ ALUMINIZED ASBESTOS CLOTH. Protects by reflection against radiant heat and flame — up to 1400° F.



Light in weight, yet sturdy and rust-proof. Assembles in 5 minutes — no threads. Folds flat. Dozens of uses — welding curtain, machine screen, grinding shield, wall curtain, etc. Available in all sizes. Ask your dealer or write us.

**16 PAGE CATALOG**  
Complete line of work gloves, welding gloves and safety clothing.

Special Products Division  
**SINGER**  
GLOVE MFG. CO.  
840 W. Wood St.,  
CHICAGO 22, ILL.

**SEE OUR AD IN WELDING DIRECTORY**

—From page 129

will kick it out and jackknife all over the place. And their unfamiliarity with mechanical things prevents their detecting equipment troubles before the trouble develops into a costly breakdown. But with constant instruction we manage to turn out some fair operators.

It's surprising at times to learn how a people's customs and habits will affect their methods of working. We had an interesting time this past year building a large portion of Brasilia, the new capital city of Brazil—now going up about 600 miles inland from Rio de Janeiro.

The largest part of our contract calls for construction of foundations and erection of steel for 11 eight-story ministerial buildings and two twin 28-story congressional buildings. Structural steel is rare in Brazil and in most of South America. They build almost exclusively with concrete.

We went down there with only one erection superintendent and five foremen. The rest of the crew had to be trained almost from scratch. We actually set up a school on the site and spent a lot of time teaching them to walk beams and catch hot rivets. Handling the rivets proved to be a bigger problem than we had anticipated, because most South Americans simply get little experience in throwing things.

Most of their sports, like soccer, require tricky leg movements. And once in a while, when one of our trainees could not position himself quickly enough to catch an oncoming hot rivet, he would make a quick hop on one foot and kick the rivet out of the way. We had a few cases of hot-foot before they learned how to catch.

Our training paid off. We topped out the twin 28-story skyscrapers a few months ago and also completed the 11 ministerial buildings with little or no trouble, and with considerable speed.

In our domestic work, our safety problems are also different from those most of you encounter, because we're an off-beat outfit. In this country, we're strictly pile-driving subcontractors, moving on and off jobs in a few months' time, with specialized equipment and at several hundred locations every year.

## Ends Static Hazards! Resists Acid Damage!

UNION MADE  
**CHEM-WEAR**

100% Dynel, Anti-Static  
Acid Resistant

## WORK CLOTHES

Safe, nationally advertised CHEM-WEAR work clothes are always comfortable. They can be easily laundered without discoloring and will give long service. Wear CHEM-WEAR Shirts, Trousers, Coveralls, Laboratory Coats, Work Aprons and be safe.



### HOODED COVERALLS

For Boiler Maintenance Men  
Completely covers from head to foot  
Adjustable hood and legs  
Send for Illustrated Folder Today

If Not Available at Your  
Safety Dealer Write to

**M. SETLOW & SON, Inc.**

Quality since 1896  
131 CHESTNUT STREET  
NEW HAVEN, CONNECTICUT

For Safe, Easy  
Handling of  
Carboys and Bottles

## MORSE Universal Carboy Rocker #10



For acid carboys, from 18x18x23 to 20x20x25. Outlet of bottle is approximately 20" above floor for safe dispensing. Two 3" diameter wheels make this Universal Carboy Rocker a combination rocker and truck. Special Polyethylene Carboy Rockers available.

## MORSE Bottle Tipper #18

Handles 5-gal. glass bottles with ease and safety. Two steel straps, securely locked with a simple catch, hold bottle in position.



For Morse catalog, clip this ad to your letterhead.



**MORSE**  
MANUFACTURING CO., INC.  
705 W. Main St., E. Syracuse, N.Y.

## Fire Prevention Signs

### STOP FIRES BEFORE THEY START

Complete line includes approved signs for every purpose, indoors or outdoors. Two gauges of steel available, with baked enamel or porcelain enamel finish. Send today for catalog and prices.

**DANGER**  
EXPLOSIVES  
KEEP OUT

**POSITIVELY  
NO SMOKING**

**FIRE SIGNAL**

**DANGER**  
NO  
OPEN LIGHTS

**CAUTION**  
DEPOSIT MATCHES  
AND ALL SMOKING  
MATERIAL IN THIS  
RECEPTACLE

**FIRE ESCAPE**

**NOTICE**  
POSITIVELY  
NO SMOKING  
ON THESE PREMISES

**NO SMOKING  
IN THIS ROOM  
AT ANY TIME**

## STANDARD SIGNS

INCORPORATED  
3190 EAST 65th STREET  
CLEVELAND 27, OHIO



**SIRENO**  
(TRADE MARK)

## WARNING SIGNALS



**POWERFUL  
REVOLVING  
&  
FLASHING LITES**

**SIRENS  
ALL SIZES  
&  
TYPES**



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EMERGENCY VEHICLES**

Write for free Bulletin No. 70

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## SLIP-ON GUARD



**PREVENTS  
FLUORESCENT  
LAMPS  
from FALLING**  
NO ACCIDENT A  
DAY KEEPS THE  
DOCTOR AWAY

## GETS-A-LITE GUARD and GUIDE

**Quickly and Easily Installed  
by Anyone—No  
Tools Needed!**

- Simply slip GETS-A-LITE GUARD AND GUIDE over the fixture, as illustrated.
- Made of indestructible spring steel wire. Nothing to break, get out of order or replace. Will last indefinitely.
- Once installed, GETS-A-LITE GUARD AND GUIDE is NEVER removed.
- Nothing to unlock, fuss with or lock, when changing lamps.
- GETS-A-LITE GUARD AND GUIDE actually steers lamp into socket, enabling maintenance man to change lamp in 10 seconds!
- Available for 40 watt and 100 watt fluorescent lamps.

**GETS-A-LITE CO.—Dept. NSN-119**  
3845 N. Milwaukee Ave., Chicago 41, Ill.

Circle Item No. 100—Reader Service Card

National Safety News, November, 1959

Our biggest safety problem stems from the mobility of our operation. On a typical pile job, we move into a new area with only a few men experienced in the complexities of our methods and equipment. Usually there's a foreman and a superintendent. The rest of the crew, operators and laborers, must be recruited locally. And some areas of the country are short of experienced construction craftsmen, especially for a specialty like ours.

We haven't found any good solution to the problem, except thorough indoctrination and training by our own field men. Keeping these foremen and superintendents alert to their responsibility is an important part of the program.

To do this, we send periodic memos to all supervisory personnel, calling their attention to our accident problems and repeating their responsibilities. Our safety engineers and general superintendents also make regular visits to the field to hold safety meetings.

## Calendar Contest For August



Clyde Campbell of E.I. duPont deNemours & Co., Inc., Victoria, Tex., won the \$100 first prize in the National Safety Council's "Safety Saying" contest with this line:

*Comp'ny manners for home are best too!*

The contest appears monthly on the back pages of the Council's calendar. The theme for the August contest was "Use Tools With Care."

Second prize of \$50 went to Robert E. Conner, American Industrial Chrome Co., Pittsburgh, Pa. His entry was:

*Hit the nail on the Fred when care flew.*

Miss Ruth B. Altman (Individual Member) of Miami, Fla., won third prize of \$25 for this line:

*When you buy...specify*

**HUNTSMAN**



*Fiberglass*

**WELDING HELMET**  
with "Extra Value" features

*More  
square inches  
of protection  
but no extra  
weight*



**Compare HUNTSMAN!** The most copied helmet in the industry offers angle-shape with more square inches of protection, but no extra weight.

**ORDER TODAY**

**KEDMAN CO.** 233 South 5th West  
Salt Lake City, Utah

**LITE-GUARD  
FLASHER BARRICADE**  
High Visibility 7 inch Flashers  
One and Two Light Models  
Retractable Legs



**Model 58-220**

**NEW TRANSISTOR CIRCUIT  
BETTER and BRIGHTER  
SAFE-DEPENDABLE-LOW COST**



**Park Industries, Inc.**

**Department E  
MELVINDALE, MICHIGAN**

**Territories available  
Write for Free Literature**

Circle Item No. 102—Reader Service Card

**Ventilate and Heat that manhole Safely**



**Mo Pe Co**

**propane VENTILATING HEATER**

**Fresh Air...heated fresh air in one portable unit!**

- Weighs only 62 pounds
- 300 to 800 cfm fresh air
- 10° to 96° temperature rise
- Propane or Butane fuel
- 10' L.P.G. hose standard
- Safe fresh air blown into manhole at all times.
- Eliminates manhole explosion and oxygen deficiency accidents.

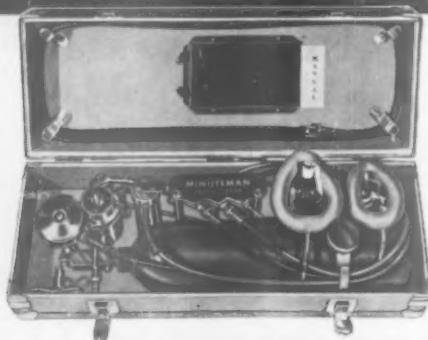
Order through your favorite distributor.

WRITE FOR ILLUSTRATED BROCHURE SHOWING ALL MoPeCo MODELS.

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## The STEPHENSON MINUTEMAN RESUSCITATOR

**—ready willing and able**



Instant action, easy operation, equal to every respiratory emergency—briefly describes the Stephenson Minuteman Resuscitator. It protects against ALL such hazards as smoke or fume suffocation, drowning, heart attack, electric shock, asthma, etc. Extremely compact—24½" x 8¾" x 7¾", under 30 pounds with tank—it can be rushed to the scene. Yet it combines the functions of resuscitator, inhalator, and aspirator. With an extra Midget attachment, it can resuscitate two people and aspirate a third simultaneously.

The Minuteman operates about 40 minutes with a D tank. Refills are inexpensive. Pressures are adjustable from Adult to Infant. This range is essential where the patient makes the first efforts to breathe after being overcome, also in chest injuries, and in working with small children. The instrument is easily regulated to mixtures from 100% oxygen to 50% oxygen, 50% nitrogen from the air. This feature is important in prolonged cases, avoiding the possibility of oxygen poisoning.

Send coupon for full information



U.S.A.  
Represented in Canada by  
Wilson & Cousins, Toronto

### STEPHENSON CORPORATION

Red Bank, N. J.

( ) Please send Minuteman Folder G-11.  
( ) Please send Bulletin: "The Breath of Life," explaining use of resuscitators.

NAME \_\_\_\_\_  
TITLE \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

*Did a 'bang-up job' proving them true.*

The 30 winners of \$5 prizes are:  
George Murphy, The Milwaukee Journal, Milwaukee, Wis.

Miss Betty Cloud, The Mead Corp., Kingsport, Tenn.

Jim McMillan, Rock Island Steel Co., Rock Island, Ill.

Vilhelm R. Hansen, Braden Copper Co., Sewell, Rancagua, Chile.

Mrs. Alton E. O'Banion, Southwestern Bell Telephone Co., Austin, Tex.

Miss Dorothy L. Mortensen, Radio Station WTIC, Hartford, Conn.

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E. M. Bostic, Mason Dixon Lines, Kingsport, Tenn.

Charles T. Wade, Radio Station WFLA, Tampa, Fla.

# TRADE PUBLICATIONS

These trade publications will keep you up-to-the-minute on new developments in safety equipment and health products. All catalogs are free, and will be sent without obligation. Just circle publication number on the Reader Service Postcard.



## Safety Films

Safety films do an invaluable educational job, help workers guard against accidents. Bray Studios, Inc., 729 Seventh Ave., New York 19, describes the films in its safety film library. They include movies covering proper lifting procedures, the care of the heart, and the costly common cold.

For more details circle No. 400  
on enclosed return postal card.

## Fluorescent Paint for Vehicle Safety Marking

A folder on the potential uses and merits of the new Du Pont "Pyralux" fluorescent enamel for safety marking and advertising painting of commercial vehicles is available upon request to Finishes Division, Room 8033-D, E. I. Du Pont de Nemours & Co., Wilmington 98, Del. The high-visibility material in colors four times brighter in daylight than conventional hues is widely used on aircraft for prevention of air collisions and is now available for trucks, buses, and fleets. "Pyralux" increases in brilliance in poor light when visibility is low.

For more details circle No. 401  
on enclosed return postal card.

## Ultrasonic Cleaning of Laboratory Equipment

Bulletin No. S-364, *Ultrasonic Cleaning of Laboratory Equipment*, is now available from Branson Ultrasonic Corp., 40 Brown House Road, Stamford, Conn. Of particular interest to hospital, medical, and laboratory personnel, this bulletin describes the removal of carbon, iodine, and dried blood from pathology and chemistry lab equipment. Two cleaning methods are discussed for each contaminant. Results obtained with and without ultrasonic energy are compared and illustrated.

For more details circle No. 402  
on enclosed return postal card.

## Porto-Power Hydraulic Rescue Equipment

Bulletin No. 0911-1 describes operating principles of the MSA Porto-Power Hydraulic Rescue Equipment, which combines a hand-powered hydraulic pump and hydraulic ram to convert manual power into a maximum of 20 tons of power applied to rescue operations. A wide variety of applications are illustrated, including removal of piled debris, bracing of tunnel walls, opening smashed vehicle doors, and spreading jammed openings. Three packaged Porto-Power sets are described in the bulletin: 4-ton for light duty; 10-ton for general duty; and 10- and 20-ton for heavy duty. A special 50-ton unit for lifting in mine, railroad, factory, and marine disasters is also illustrated, together with a line of hydraulic hand jacks ranging from 1½ tons to 100 tons. Mine Safety Appliances Company, 201 N. Braddock Ave., Pittsburgh 8, Pa.

For more details circle No. 403  
on enclosed return postal card.

## Laboratory Ware

The new 24-page catalog No. H-459 is now available, covering polyethylene, polypropylene, polyurethane and polyvinyl plastic laboratory apparatus. Laboratory ware made from these materials is lightweight and is highly resistant to chemical attack. Illustrates and describes over 100 products. Technical properties are discussed in their relation to this development. General Scientific Equipment Co., Limekiln Pike and Williams Ave., Philadelphia 50, Pa.

For more details circle No. 404  
on enclosed return postal card.

## Hose Reel Ceiling Outlets

Hose reel ceiling outlets for operating and recovery rooms are described in bulletin NM-158 titled, *NCG Hose Reel Ceiling Outlets*. Photographs, drawings, and diagrams show the installation and operation of the new single and multirole outlets which eliminate clutter and promote safety: National Cylinder Gas Div., Chemetron Corp., 840 N. Michigan Ave., Chicago 11.

For more details circle No. 405  
on enclosed return postal card.

## Floodlights

Bulletin 2714 describes and illustrates "How To Select Floodlights, Heavy Duty Floodlights, General Purpose Floodlights, Mercury Vapor Floodlights, Special Lighting Fixtures, Hazardous Area Lighting, Searchlights, Underwater Floodlights, Floodlight Poles, Accessories, Installation Suggestions, and Calculations." Crouse-Hinds Co., Syracuse 1, N. Y.

For more details circle No. 406  
on enclosed return postal card.

## Bradley Group Showers

*Bradley Group Showers* is the title of a newly published bulletin covering multi-person type shower baths. All details of the basic shower column (three heights) are given along with method of installation and floor plan suggestions. Typical photographic views include installations showing the shower columns alone and with stall-separating partitions. Also, there is an illustration of the new wall-mounted 3- and 2-person shower with dimensional data. Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee 1, Wis.

For more details circle No. 407  
on enclosed return postal card.

## Electrical and Mechanical Products

Catalog No. 100 describes company's complete line of electrical and mechanical products. Some of the items shown are: anchors, screws, toggles, masonry drills, wire connectors, straps and clamps, wiring tools, snap-straps, drive-straps, and fuse specialties and testers. Holub Industries, Inc., Sycamore, Ill.

For more details circle No. 408  
on enclosed return postal card.

## Extruded Manganese Bronze

A new extruded manganese-bronze alloy for high production jobs is described in Bulletin G-53, available from Ampco Metal Inc., 1745 S. 38th St., Milwaukee 46, Wis. The alloy, named Ampcoalloy 056, is a high quality bearing bronze with good machinability and high resistance to wear and corrosion. Included in the data sheet are: chemical composition, physical properties, a description and advantages of the new alloy and some applications.

For more details circle No. 409  
on enclosed return postal card.

## Emergency Equipment

This 20-page catalog describes and illustrates the company's complete line of patient handling equipment, including ambulance cots, stretchers, tables, and other aids to safer, more convenient, and more efficient handling and transfer. It also includes many other Ferno accessory items and a number of new products that have been introduced since the previous catalog was issued. Prominent in the catalog are the famous One-Man Roll-In Ambulance Cots. These are the cots that eliminate all dangerous lifting. One man can load and unload without lifting an ounce, which makes it possible for one man to load and unload patients from ambulances without assistance—and without strain. Other new items to appear in the catalog are: Model 12 Ferno Stretch'R-Cot, featuring a recessing bed, to provide maximum headroom; and, Model 105U Light-quick Emergency Folding Stretcher with snap-out "U" legs. Ferno Mfg. Co., 6th & Pine Sts., Greenfield, Ohio.

For more details circle No. 410  
on enclosed return postal card.

## Safety Mitt

The Keinit Klaw, a completely new reversible-interchangeable safety mitt that provides greater comfort, protection and economy, and which is said to outwear up to four average work gloves due to its combination of Iron-Kore fabric and two individual wearing surfaces, is described and its use fully illustrated in a two-color, 4-page folder just released by Keller Glove Mfg. Co., Plumsteadville, Pa. According to the manufacturer, the most unusual feature of the KLA design—which is also available in hand pads with four wearing surfaces and eight wearing positions—is the extra thumb tucked in across the back of the hand to provide additional cushion protection for this critical area: this second thumb is pulled out and the original surface tucked in when the latter becomes worn. The semi-porous Iron Kore fabric dissipates heat and, as its surface consists of closely woven loops, it resists cuts from sharp metal edges that would ruin smooth surface gloves. The Hand Pad is also described and illustrated.

For more details circle No. 411  
on enclosed return postal card.



### Safety Engineering Equipment Catalog and Manual

Just published is a practical working guide to the safe handling and application of flammable liquids in the production and maintenance operations of modern industrial and chemical plants. It gives a clear outline of the problems involved in the use of flammables in individual processes, and describes the methods and equipment required for safe control and use from receipt on the premises in original containers or drums, through each process or application, to final disposal. The catalog presents a clear, concise statement of the physical properties and characteristics of the most commonly used flammables and describes the engineering principles and methods by which these hazardous liquids are controlled in specially designed containers and dispensers for complete worker and plant protection from disastrous flash fires and explosions. Divided into six general plant operating sections for quick, convenient reference. Each section contains recommendations for the safe, convenient use of hazardous liquids and guides to selecting the proper types of equipment. The Protectoseal Co., 1920 S. Western Ave., Chicago 8.

For more details circle No. 412  
on enclosed return postal card.

### Fire Protection Suit

Major fire protection equipment produced by Mine Safety Appliance Co., 301 N. Braddock Ave., Pittsburgh 8, Pa., is described in a new bulletin No. 1314-1. Two new products are illustrated: the MSA Fireman's Bunker Suit, made of aluminumized fabric 50 per cent lighter than ordinary materials; and the A-1-B Fire Fighter's Hood, a specially designed unit with a fiber head gear mounted on a Skulgard safety cap and draped with aluminumized fabric cover. The bulletin also features details on the company's Fire Protection Suit, an approach-type cover-all unit made of fiber glass fabric, which is coated on the inside with neoprene for a vapor barrier, and on the outside with an aluminumized vacuum treatment. Also included is a description of the A-1-A Fire Fighter's Hood, a unit consisting of a fiber head gear mounted on a Skulgard safety cap and draped with a fiber glass wool-lined cover attached to the head gear.

For more details circle No. 413  
on enclosed return postal card.

### Warehouse Layout

This brochure, *Warehouse Layout: Narrow Aisles or Wide?* is designed as a guide, which gives both the advantages and disadvantages to this costly problem so the material handling engineer might decide which type of warehouse is best for his installation. The history of the narrow aisle-wide aisle problem is discussed, along with the changes and advances that have been made through the introduction of new material handling equipment. Four pages of Automatic equipment in operation illustrate how many users are presently solving the narrow-wide aisle problem. Additional materials handling booklets are listed to help the user select the correct truck for the individual job from more than 200 different standard models of electric-driven trucks manufactured by Automatic Transportation Co., 140 W. 87th St., Chicago.

For more details circle No. 414  
on enclosed return postal card.

### Aluminum Ladders

Catalog No. 6 describes company's complete line of aluminum ladders. Described and illustrated are: step ladders, platform step ladders, folding step ladders, warehouse ladders, heavy-duty warehouse ladders, extension ladders, aluminum stage, aluminum scaffold ladders, aircraft service ladders, telescoping ladders, single wall ladders, gangway ladders, marine ladders, and ladder safety shoes. Aluminum Ladder Co., W. Darlingston St. Ext., Florence, S. C.

For more details circle No. 415  
on enclosed return postal card.

### 16mm Sound Films

International Film Bureau, Inc., 37 E. Jackson Blvd., Chicago 4, has made avail-

able their new 1980 sales catalog which illustrates and describes all their 16 mm sound films. It also includes a list of safety films that are available.

For more details circle No. 416  
on enclosed return postal card.

### Self-Energizing Pipe-Size Valves and Fittings

A new 12-pp bulletin, No. 4072, describing Aminco's new line of high-pressure pipe-size valves and fittings, is now available from the American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md. These valves and fittings are equipped with lens-ring gaskets and union-type joints. The lens-ring gasket is self-energizing with a pressure seal that tightens as internal pressure increases. Leak-tight pressure systems can be made in a matter of minutes and joints can be made and unmade many times without damaging the joint. The new line has wide application in the missile and chemical processing fields where new setups must be made often and in a minimum of time. The bulletin describes the preparation of these joints and lists Aminco's complete line of lens-ring gasket valves, connectors, elbows, tees, and cross-type fittings, as well as many special purpose fittings and socket weld fittings.

For more details circle No. 417  
on enclosed return postal card.

### Rolling Steel Doors

Catalog No. G-60 describes company's complete line of rolling steel doors, grilles, and shutters. Hand operated, mechanically operated, power operated, Underwriters' labeled and non-labeled types to meet every door requirement are shown. Design data is also included. The R. C. Mahon Co., Detroit 34, Mich.

For more details circle No. 418  
on enclosed return postal card.

### Safety Flooring

Colorful, well-illustrated booklet details the advantages of metal flooring, which has been designed to provide an anti-skid surface and safe footing. Steel or aluminum trends can be used for stairs and landings, floors, work platforms, and dockboards. Complete specifications are included. The Globe Co., Products Div., 4000 S. Princeton Ave., Chicago 9.

For more details circle No. 419  
on enclosed return postal card.

### Emergency Lighting Equipment

Attractively designed brochure spotlights a complete line of portable flood and searchlights, colored warning lights, and automatic standby lights. Equipment is designed to protect life and property when current failure causes normal lighting facilities to go out. Units feature "spill-proof" batteries. Equipment meets requirements established by fire, police, industrial, and civil defense authorities. Carpenter Mfg. Co., 409 Bradley St., Somerville 48, Mass.

For more details circle No. 420  
on enclosed return postal card.

### Protective Clothing and Equipment

A 44-page booklet introduces the latest innovations in the famous Gardwell line of protective clothing. Equipment from gloves to knee pads is detailed. Construction features and safety factors are specified. The latest developments in the use of synthetic fabrics and coatings are highlighted and illustrated. Safety Clothing & Equipment Co., 1900 E. 69th St., Cleveland, Ohio.

For more details circle No. 421  
on enclosed return postal card.

### Safety Shoes

In-stock catalog describes and illustrates a complete line of safety shoes. All the shoes have been created with both safety and style in mind. Shoes are available for both men and women to protect against such hazards as chemicals and greasy/oil-soaked floors, as well as featuring steel toes for impact protection. Iron Age Safety Shoe Div., H. Childs & Co., 1205 Madison Ave., Pittsburgh 12, Pa.

For more details circle No. 422  
on enclosed return postal card.

### Eye and Face Protection

Brochure describes a full line of eye and face goggles, spectacles, and shields. Introductory pages illustrate several behind-the-scenes shots of the various research steps necessary in developing an effective piece of eye protective equipment. Recommendations are also included to help develop an eye safety program. U. S. Safety Service Co., 1535 Walnut St., Kansas City 8, Mo.

For more details circle No. 423  
on enclosed return postal card.

### Welding Accessories

Welding accessories from brushes to caps, goggles, helmets, and weld probes are featured in an interesting new booklet. Headgear of both vulcanized fiber glass and aluminum is described, as well as a system for obtaining needed replacement parts for used equipment. Of special interest is a section devoted to newly designed safety masks which reduce heat radiation without loss of ventilation. The Fibre-Metal Products Co., 5th and Tilghman Sts., Chester, Pa.

For more details circle No. 424  
on enclosed return postal card.

### Skin Protection

Brochure illustrates a line of skin cleaners and protective creams. Brochure also introduces a new "work lotion" with lanolin, silicones, emollients, and camphor, which has been formulated for the relief of dry, chapped skin. The Chemical Corp., 51 Waltham Ave., Springfield, Mass.

For more details circle No. 425  
on enclosed return postal card.

### Manual Cranes

Informative folder gives descriptive and technical data on top-running, single-bridge, hand traveling cranes in capacities of from 1 to 10 tons. Bulletin features construction, weight, dimension, and safety factor for application where accurate spotting is more important than speed. Wright Hoist Div., American Chain and Cable Co., Inc., Bridgeport 2, Conn.

For more details circle No. 426  
on enclosed return postal card.

### Chain Safety Booklet

*Vital Links to Safety* is the title of this well-planned and informative booklet that outlines the fundamental safety precautions for the use and care of industrial chains. Cleverly illustrated with cartoon drawings, the booklet covers: chain safety terms, proper use of chain, safety cautions, proper inspection, working load limits. The McKay Co., 1005 Liberty Ave., Pittsburgh 22, Pa.

For more details circle No. 427  
on enclosed return postal card.

### Protective Clothing

Literature illustrates new protective clothing for body, head, and feet with custom designs for all industrial requirements—factories, plants, and laboratories. Special emphasis on an armored jacket for lab wear. Worklon, Inc., 253 W. 28th St., New York, N. Y.

For more details circle No. 428  
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### Fumigant Masks

Acme Protection Equipment Co., 1201 Kalamazoo St., South Haven, Mich., has made available a bulletin that details information on history, use, hazards, and protection for users of modern insecticides, and describes mask equipment available. Included in the bulletin are special cautions and instructions.

For more details circle No. 429  
on enclosed return postal card.

### Safety Spectacles

The "GW" Safety Spectacle series is featured in a bulletin that describes new spectacles, and provides complete information on sizes, features and protection offered by this safety eyewear. Wilkie Optical Co., Shreve Ave. & New Jersey Turnpike, Barrington, N. J.

For more details circle No. 430  
on enclosed return postal card.



### Matting Blueprint

Brochure contains detailed description of all types of safety, comfort, and scrape matting. It includes a floor plan of a typical industrial plant with indication of the proper mat material for each area. American Mat Corp., 2018 Adams St., Toledo, Ohio.

For more details circle No. 431  
on enclosed return postal card.

### Linemen's Equipment

Catalog No. 56 contains a review of W. M. Bashlin Company's linemen's equipment ranging from belts, safety straps, and tools to linemen's boots and gloves. Just about every type of protective equipment designed to insure linemen's safety is included. W. M. Bashlin Co., Grove City 3, Pa.

For more details circle No. 432  
on enclosed return postal card.

### Minuteman Resuscitator

The Minuteman Resuscitator provides instant action and easy operation in any respiratory emergency. It is compact and lightweight (under 30 lbs.) and combines the function of resuscitator, inhalator, and aspirator. Complete details are in literature prepared by Stephenson Corp., P. O. Box 392, Red Bank, N. J.

For more details circle No. 433  
on enclosed return postal card.

### Pres-Vac Safety Feeders

Safety feeders and air blast valves share the spotlight in a new catalog available from F. J. Littell Machine Co., Vac-U-Mation Div., 4165 Ravenswood Ave., Chicago 13. Feeders feed blanks to presses by air from a safe distance of 14 in. Air blast valves reject parts safely with each strike of the press. Complete product details are spelled out in the catalog.

For more details circle No. 434  
on enclosed return postal card.

### Neoprene Soles and Heels

Neoprene soles and heels, a product of Du Pont Research, feature the best properties of rubber, and in addition, combat rubber's worst enemies—heat, oils, chemicals, and solvents, according to literature released by Quabaug Rubber Co., North Brookfield, Mass. A new pamphlet contains complete details on Quabaug's line, with various models of soles and heels illustrated and available colors and sizes listed.

For more details circle No. 435  
on enclosed return postal card.

### Sound Survey Meter

A sound-survey meter that places sound measurement at your fingertips is covered in new G-R Sound Bulletin. The meter fits in a coat pocket, can be operated with one hand, and features an easy-to-read dial. This product takes the guesswork out of noise appraisals. General Radio Co., 22 Baker Ave., W. Concord, Mass.

For more details circle No. 436  
on enclosed return postal card.

### Engineered Special Hazard Fire Protection

This 28-page illustrated booklet contains factual information on methods of fire detection, fire prevention, fire control, and fire extinguishment. "Automatic" Sprinkler Corp. of America, Box 360, Youngstown, Ohio.

For more details circle No. 437  
on enclosed return postal card.

### Athlete's Foot Preventive

Skin toughening as a preventive for athlete's foot is discussed in a new Onox, Inc., folder which includes the latest scientific data on athlete's foot. Onox, Inc., 121 Second St., San Francisco 7, Calif.

For more details circle No. 438  
on enclosed return postal card.

### Safety Signs

Embossed safety signs with special channels for interchangeable numerals or let-

ters alert employees to hazards. The manufacturer, Ad-O-Plastic, will emboss your own wording on signs at low cost. Complete product details on this company's line are spelled out in a new brochure. You merely select the size and color of the sign you need and prepare copy. Ad-O-Plastic does the rest. Ad-O-Plastics, P. O. Box 474, Woodbridge, N. J.

For more details circle No. 439  
on enclosed return postal card.

### Steel Lifting Clamps

Steel lifting clamps, equipped with safety snap locks, are reviewed in new literature prepared by J. C. Renfro & Sons, Inc., 1926 Sparring St., Jacksonville, Fla. These clamps lock on and off in any position, cannot be accidentally knocked off, and have a safety factor of 5 to 1, according to the manufacturer. Clamps are stress-tested to 3 times rated capacity before shipment.

For more details circle No. 440  
on enclosed return postal card.

### Resuscitator

A resuscitator which consists of a self-inflating bag, a one-way valve, and a face mask delivers volumes of up to 700 cc with each squeeze, depending upon the size of the operator's hand. Can be obtained for use with air only or with air and oxygen. Complete details on the product are in literature of Air-Shields, Inc., County Line Road, Hatboro, Pa.

For more details circle No. 441  
on enclosed return postal card.

### Folding Cot

The folding cot is a complete stretcher ideally suited for use as an auxiliary stretcher in an ambulance. The cot's backrest is adjustable; a patient's shoulders may be raised or lowered for his comfort. While the cot is open, dimensions are 72 by 20 by 8 inches; folded, it measures 37 by 20 by 5 inches. The cot is described and illustrated in a pamphlet prepared by Bomgardner Mfg. Co., 1384 Hird Ave., Cleveland 7, Ohio.

For more details circle No. 442  
on enclosed return postal card.

### Linemen's Equipment

Linemen's safety belts, safety straps, D-rings, and lanyards, are included in the Miller Equipment Co. Catalog No. 58-A. The entire line, including industrial hardware and safety tools, is reviewed. Product applications and specifications are cited. Miller Equipment Co., 13th and Eagle Sts., Franklin, Pa.

For more details circle No. 443  
on enclosed return postal card.

### Punch Press Guards

A 12-page catalog illustrates and describes punch press guards produced by Searjeant Metal Products Co., North 10 Pittsford Road, Mendon, N. Y. Among the products illustrated and described are: single sweep and double sweep guards, nonrepeat mechanisms, and two-hand electro solenoid controls.

For more details circle No. 444  
on enclosed return postal card.

### Chisel Grips

Safe-Hi chisel grips provide protection against smashed fingers and hands by keeping them well away from dangerous off-angle hammer and sledge blows. These devices hold a steel stamp or chisel securely, thus eliminating the danger of flying chisels. Complete product details are contained in literature offered by Rose Mfg. Co., 2700 W. Barbary Place, Denver, Colo.

For more details circle No. 445  
on enclosed return postal card.

### Vibratone Horn

You can signal trouble throughout the plant by using the powerful voice of a Vibratone horn. It fits any four-in. outlet box, is self-tuning, and has full-range volume control. Now produced in a new

modular design for ease of installation and attractive appearance. Literature gives full details. Federal Sign and Signal Corp., 13825 S. Western Ave., Blue Island, Ill.

For more details circle No. 446  
on enclosed return postal card.

### Safety Cap

The Veki safety cap keeps women employees free from the dangers courted by ponytails and other long hairdos. This roomy, elastic-type snood adjusts to all head sizes and may be obtained in navy blue or brown. Literature from manufacturer tells all about this attractive safety cap. Kennedy-Ingalls, Inc., 3735 N. 35th St., Milwaukee 16, Wis.

For more details circle No. 447  
on enclosed return postal card.

### Revolving Cup Guards

Revolving cup guards for your portable tools are described in literature prepared by Morrison Products, Inc., 16816 Waterloo Road, Cleveland 10, Ohio. They are described as lightweight, durable, and economical. The product is manufactured in compliance with the American Standard Safety Code.

For more details circle No. 448  
on enclosed return postal card.

### Portable Bottle Crusher

Bulletin describes a portable bottle crusher that provides an efficient, economical way to eliminate the danger and wasted space of unwanted glass. As fast as glass is tossed in the hopper, it is automatically crushed and deposited in a sealed metal receptacle, ready for disposal. Vis-O-Lite Co., Inc., 126 Sidney St., St. Louis 4, Mo.

For more details circle No. 449  
on enclosed return postal card.

### Sound Protectors for Ears

Muff-type sound protectors shut off all abnormally loud noises harmful to the ear, but do not shut off normal conversation. These ruggedly-constructed but comfortable devices do not require fitting and adjusting, and are sanitary, according to the manufacturer. David Clark Co., Inc., 360 Park Ave., Worcester, Mass.

For more details circle No. 450  
on enclosed return postal card.

### Speeds Construction of Safety Railings:

By eliminating threading and welding and minimizing pipe cutting, high-strength aluminum Nu-Rail Slip-On Structural Fittings save up to 30 per cent in costs. Five basic fittings make up combinations for any kind of safety or guard rail for use outdoors or indoors. Bulletin gives full details. Hollander Mfg. Co., 3641 Spring Grove Ave., Cincinnati 23, Ohio.

For more details circle No. 251  
on enclosed return postal card.

### Safety Wheel Blocks:

A new bulletin describing its Model WB2H cast steel wheel block has been published by Calumet Steel Castings Corp., 1636 Summer St., Hammond, Ind. Designed to block the wheels of trucks, trailers, and other vehicles, the WB2H Wheel Block is finding wide application on loading docks, platforms, etc., especially when the vehicles are loaded by fork trucks. The safety wheel blocks prevent movement of the vehicle when the loaded fork truck's weight is transferred from the dock to the trailer.

For more details circle No. 252  
on enclosed return postal card.

### Rest Room Sanitation

Literature introduces a toilet disinfectant in tablet form, which is said to be more effective than phenol in destroying bacteria. Tablet is easy to use and kills germ-carrying bacteria in 30 seconds. Tablet can also be used to remove rust and lime deposits. Horizon Industries, 413 Lumber Exchange, Minneapolis 1, Minn.

For more details circle No. 253  
on enclosed return postal card.

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San Francisco: Duncan A. Scott & Co.  
85 Post St., GAfield 1-7950

Los Angeles: Duncan A. Scott & Co.  
1901 W. 8th St., DUmkirk 8-4151

*Another Outstanding Safety Equipment Development from CESCO*

NEW

*Designed with  
your head in mind!*

**—a Premium-Quality Headgear at No Increase in Price!**

**T**HE remarkable Hed-Rite Headgear adjusts three ways: for head size; for overall strap length; for overhead strap position.

Easy-turning rear knob provides head-size adjustment by ratchet action. Ratchet is non-stripping in normal use. Excessive tension results only in slippage without damage to the ratchet or teeth.

Wide cross strap pivots freely back and forth. Four holes in each end of this strap give eight positions of adjustment so as to conform to any crown height and any head contour.

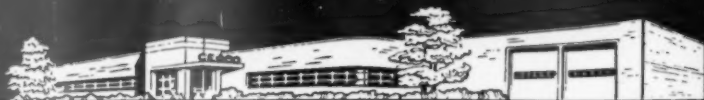
Unique design of the headband gives the proper combination of curves and opposing cambers to produce the broad contacts necessary for complete comfort.

The Hed-Rite headgear may be worn with any face shield, helmet, hood or goggle equipped with CESCO X-12 brackets. Only three typical applications are shown. Headgear is instantly detachable from helmet or shield without the use of tools. There is no electrical conductor between the interior of the headgear and the exterior of the shield or helmet.

**FOR MORE INFORMATION** about the new G-3 Hed-Rite Headgear, contact your nearby CESCO distributor or write our Chicago headquarters for a copy of the Hed-Rite descriptive folder

CESCO

**FOR SAFETY**

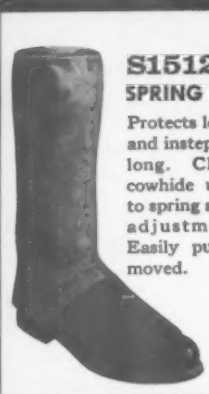


Circle Item No. 18C Reader Service Card



### S7X211 SPAT

Flare is 7½" long — may be trimmed to fit smaller foot. Chrome leather, ankle length with elastic webbing at top. Two snap fasteners on elastic with two leather adjustable ankle straps. Understrap same material as flare and replaceable.



### S1512CL SPRING LEGGING

Protects lower leg, ankle and instep. Flare is 5½" long. Chrome-tanned cowhide uppers riveted to spring steel frame. No adjustment needed. Easily put on and removed.




### S4901CL LEGGING

Flare 4½" long. Spring steel stay for fast removal — also pull tab, 4 snap fasteners at top. Leather pocket at ankle for positioning steel stay. Fibre shin guards on inside. Instep adjustable strap.

## Molten Splashes are no problem when workers WEAR AO "NO CURL" Safety Leggings and Spats!

American Optical's "No Curl" flare *stays put* — protects from splash burns in the vulnerable area where the spat (or legging) meets the shoe. Made of a special compound, it stays flat with no sign of *curling*, week after week. What's more, it will lower foot protection costs because leggings and spats with AO "No Curl" offer longer life — up to 400% longer! This revolutionary improvement is available in a full line of AO spats and leggings, three of which are shown. Your nearest AO Safety Products Representative can supply you.

Always insist on   
Trademarked Safety Products



American  Optical  
COMPANY  
SAFETY PRODUCTS DIVISION

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Safety Service Centers in Principal Cities



